

3.3 BIOLOGICAL RESOURCES

3.3.1 Affected Environment

This section is based on a biological resource report prepared by Nevada Environmental Consultants Inc. (NECI) for the proposed expansion. The NECI report (2000) identifies and summarizes the possible biological impacts, including impacts to threatened, endangered, and sensitive species, based on a review of existing data, site-specific field surveys, and consultation with federal and state resource agencies, the Mesquite Mine, and the Imperial County Planning/Building Department. Several inventories and impact evaluations have also been completed specifically for the desert tortoise (*Gopherus agassizii*), which is a federally-listed threatened species. Desert tortoise surveys were conducted at the proposed expansion sites.

3.3.1.1 Scope and Regulatory Status

The proposed expansion areas are currently public and private land, under the jurisdiction of the BLM or the State of California, depending on location, and are governed by Federal and State laws protecting vegetation and wildlife. These include the Federal Endangered Species Act of 1973 (ESA), as amended, the California Endangered Species Act (CESA) of 1984 and the California Native Plant Protection Act of 1977. There are also several resource databases or lists, management plans and policies that apply to the proposed expansion. The following summarizes those that are pertinent to the proposed expansion.

Federal and State Legislation

Threatened and endangered species are protected under the provisions of the Endangered Species Act of 1973 (ESA), as amended, as well as the California Endangered Species Act (CESA) of 1984 and the California Native Plant Protection Act of 1977.

Federal Endangered Species Act

The federal Endangered Species Act of 1973 (ESA), as amended, extends legal protection to plants and animals listed as endangered or threatened by the U.S. Fish and Wildlife Service (USFWS). The ESA authorizes the USFWS to review proposed federal actions to assess potential impacts to listed species.

Listed species are those that are threatened or endangered (in danger of extinction throughout all or a significant portion of their range) and have been the subject of final regulation and listing in the Federal Register. Those species officially proposed for listing in a Federal Register notice are also represented.

Through Section 7 of the ESA, federal agencies, in consultation with the USFWS, are required to ensure "that any action authorized, funded, or carried out by [a federal] agency... is not likely to jeopardize the continued existence of any listed species or result in the destruction or adverse

modification of [critical] habitat." Any action taking place on the property while under BLM or State jurisdiction that involves the potential take of a federally-listed species would require Section 7 consultation with the USFWS prior to the action taking place.

Executive Order 11990, Protection of Wetlands, May 24, 1977

Executive Order 11990 directs that each federal agency shall provide leadership and shall take action to minimize the destruction, loss or degradation of wetlands in carrying out the agency's responsibilities for (1) acquiring, managing, and disposing of federal lands and facilities; and (2) providing federally undertaken, financed, or assisted construction and improvement; and (3) conducting federal activities and programs affecting land use, including but not limited to water and related land resources planning, regulating, and licensing activities.

Federal Clean Water Act

Pursuant to Section 404 of the Clean Water Act (33 U.S.C. 1344), an Individual or Nationwide Permit is required when a proposed project will cause the obstruction or alteration of "navigable waters" of the U.S. The term "waters of the United States" has a broad meaning and incorporates both deep water aquatic habitats and special aquatic sites, including wetlands, as follows:

- The territorial seas with respect to the discharge of fill material.
- Coastal and inland waters, lakes, rivers, and streams that are navigable waters of the United States, including their adjacent wetlands.
- Tributaries to navigable waters of the United States, including adjacent wetlands.
- Interstate waters and their tributaries, including adjacent wetlands.
- All other waters of the United States not identified above, such as isolated wetlands and lakes, intermittent streams, prairie potholes, and other waters that are not a part of a tributary system to interstate waters or navigable waters of the United States to which the degradation or destruction could affect interstate commerce.

The US Army Corps of Engineers typically considers USGS 7.5 - minute quadrangle map "blue line" drainages as jurisdictional waters. Section 404 of the Clean Water Act authorizes the Secretary of the Army, acting through the Chief of Engineers, to issue permits for the discharge of dredged or fill material into the waters of the United States, including wetlands, provided that the applicant demonstrates that the project design is the least damaging practicable alternative.

BLM Sensitive Species List

"Sensitive" plant and wildlife species are designated by BLM's California State Director if they meet one or more of the following criteria:

- Plant and wildlife species identified as candidates for listing as endangered or threatened by the USFWS in a Federal Register Notice of Review.
- Plant and wildlife species that have been officially proposed for listing as endangered or threatened by the USFWS in a Federal Register Notice.
- Plant and wildlife species that do not meet either of the above criteria, but have been designated as sensitive by the State Director, based in part on information from the NDDDB and private groups, such as the California Native Plant Society (CNPS).

The purpose of the designation is to provide increased management attention to prevent population and habitat declines that might result in federal or state listing as endangered or threatened.

California Endangered Species Act and Native Plant Protection Act

The California Endangered Species Act (CESA) of 1984 and the California Native Plant Protection Act (NPPA) of 1977 are administered by the CDFG. In addition to rare and endangered species, the State of California includes candidate species for plants and wildlife. Candidate species are those that have been accepted by the state for review and potential inclusion to the list of rare, threatened, or endangered species. The rare designation applies to plants only and includes those plants that are not threatened or endangered, but that could become eligible because of decreasing numbers or further restrictions to habitat.

California Department of Fish & Game Sections 1600 et. seq

Pursuant to Sections 1600-1607 of the California Fish & Game Code, a Streambed Alteration Agreement is necessary if there is to be any modification to a streambed due to construction activities. Substantial changes to natural drainage channels require a streambed alteration agreement from the California Department of Fish and Game under Section 1603 of the State Fish and Game Code. To obtain permits and/or agreements, the applicant must demonstrate that their Proposed Action is the least damaging practicable alternative.

California Department of Fish and Game Deer Herd Action Plan

The California Department of Fish and Game (CDFG) has designated the area surrounding the Mesquite Mine as the D-12 deer zone and has prepared a Deer Herd Action Plan (DHAP) for this area (1995). The D-12 DHAP addresses deer herds found in the vicinity of the existing mine and proposed expansion areas. Although this plan deals primarily with issues relating to hunting, it is an official management plan dealing with the specific issues relating to deer herds in this region and, therefore, the overall management policies are applicable to the proposed action.

Although no genetic evidence supports a differentiation, the mule deer in the area of the Mesquite Mine are referred to by the CDFG as burro deer based on subtle differences in coloration and size. There are no other deer species or subspecies found in this region. The burro deer fall within the CDFG D-12 deer zone. Local deer hunters recognize the D-12 deer zone as providing high-quality

hunting opportunities. In recent years, increased interest has resulted in more sportsmen from throughout the state applying to hunt there. The stated objectives of the D-12 DHAP are as follows:

1. Provide a reliable and repeatable method for determining deer herd population dynamics on a regular basis,
2. Accurately determine annual levels of deer harvest within the D-12 deer zone and develop monitoring programs to assess harvest impacts to the herd,
3. Conduct short- and long-term investigations to provide deer herd habitat and population data to effectively manage the burro deer herd,
4. Provide an effective method of identifying key deer habitat; predict, monitor, and mitigate impacts; and develop enhancement and protection projects, and
5. Provide a forum for the open exchange of deer herd management data and objectives between members of the Department and interested local, state, and Federal agencies and the public.

California Natural Diversity Data Base

The CDFG Natural Diversity Data Base (NDDDB) is a computerized inventory of information on the general location and condition of California's rare and threatened animals, plants, and natural communities. The species inventoried by the NDDDB are officially listed (state and federal) endangered, rare, and threatened animals and plants, plus those considered by the scientific community to be deserving of such listing. Sensitive species proposed for federal listing or candidate species are also identified by NDDDB. Although the inventory does not include other more common animals and plants, such as those that may be important for game, commercial, or aesthetic reasons, such species are of concern and NEPA/CEQA requires that they also be considered in an environmental assessment of any non-exempt project. The NDDDB does not contain information for every project location (only reported sightings); therefore, site specific surveys have been conducted for special-interest species expected to occur in the vicinity of the proposed Mesquite Mine expansion site and offered exchange parcels.

California Native Plant Society

The California Native Plant Society (CNPS) has created four lists to categorize degrees of concern for rare, threatened, and endangered plants of California. Inclusion on the CNPS lists does not accord legal protection to any species of plant or animal. These lists may be described as follows:

List 1A. This list includes plants that are presumed by CNPS to be extinct in California. CNPS asserts that all of the plants constituting List 1A meet the definitions of Section 1901, Chapter 10 (NPPA) of the California Department of Fish and Game Code, and these species are presumed by CNPS to be eligible for state listing.

List 1B. This list includes plants that are considered by CNPS to be rare, threatened or endangered in California and elsewhere. CNPS asserts that all of the plants constituting List 1B meet the definitions of Section 1901, Chapter 10 (NPPA) of the California Department of Fish and Game Code, and these species are presumed by CNPS to be eligible for state listing.

List 2. This list includes plants that are considered by CNPS to be rare, threatened, or endangered in California, but more common elsewhere. CNPS asserts that all of the plants constituting List 2 meet the definitions of Section 1901, Chapter 10 (NPPA) of the California Department of Fish and Game Code, and these species are presumed to be eligible for state listing by CNPS.

List 3. This list includes plants about which more information is needed. Necessary information about these plants is currently lacking. The plants that comprise List 3 are an assemblage of taxa that have been transferred from other lists or that have been suggested by CNPS for consideration. When the necessary information is collected, these plants would be assigned by CNPS to the proper lists or rejected.

List 4. This list includes plants that are considered by CNPS to be of limited distribution (a watch list). CNPS asserts that the plants in this category are of limited distribution in California and their vulnerability or susceptibility to threat appears low at this time. While these plants are not considered by CNPS to be rare from a statewide perspective (as in Lists 1 and 2), they are uncommon enough that their status should be monitored regularly.

3.3.1.2 Vegetation

Vegetation in the mine area reflects the arid conditions, limited rainfall and generally poor soils of the Sonoran Desert. The average annual temperature of the region is 74 degrees Fahrenheit (° F), with average highs of 105° to 110° F during the summer months, and average lows of 40° to 45° F during the winter months. Overall, temperatures range from about 30° F to about 120° F. Annual precipitation averages 3 inches, but varies greatly from year to year. The rainy season generally begins in July and ends in January.

Peak blooming season for desert vegetation typically occurs during the months of February, March, and April, when the general existing conditions survey was conducted. Runoff from occasional precipitation flows via small ephemeral drainages, or washes, that traverse the area. The desert washes are normally dry, with precipitation runoff occurring only during the occasional thunderstorms that bring precipitation to the region. Drainages generally originate in the Chocolate Mountains north of the project site and drain to the southwest where they either percolate into the shallow, wash-bottom soils, or terminate at the Imperial Sand Dunes Recreation Area (ISDRA).

The site is dominated by generally open areas and widely scattered vegetation. Sparse vegetation also is observed in the drainages. The low vegetation density reflects both the low moisture infiltration characteristics of the desert pavement and the low nutrient values and high salt levels of the generally poorly developed soils.

Plant species vary depending upon their location in washes or upland areas. Elevation also plays a local role in species distribution. Vegetation at and surrounding the mine exhibit a range of vegetation types within the Eastern Colorado Desert Creosote bush series. The project site supports three native plant communities: desert microphyll woodland (in the dry washes); creosote/desert pavement scrub (in dry washes and desert pavement areas); and, upland succulent scrub (hilly higher elevation areas onsite). Figure 3.3-1 shows the general habitat communities in the vicinity of the proposed expansion areas. A brief description of these habitats is provided below.

Microphyll Woodland

Microphyll woodland habitat is a sensitive desert plant community characterized by blue palo verde (*Cercidium floridum*), ironwood (*Olneya tesota*) and smoke tree (*Psoralea arguta*) being the dominant vegetation in canopy. These trees form mixed or single species stands in Colorado Desert washes. Microphyll woodland is a plant community that plays a valuable role in the Southwestern desert ecosystem. This community is typically found in sandy washes and forms mixed and single species stands throughout the Colorado Desert eco-region. This plant community prefers soils that are intermittently flooded.

For purposes of quantification, a stand of microphyll woodland consists of one or more of these species spaced within 100 meters of each other. The stands of microphyll woodland in the project area exhibited a patchy distribution and ranged from single tree stands to stands of 15 to 20 trees. Within the project area, this vegetation series occurs only in the washes and is dominated by blue palo verde and ironwood; these fall under the blue palo verde - ironwood - smoke tree series.

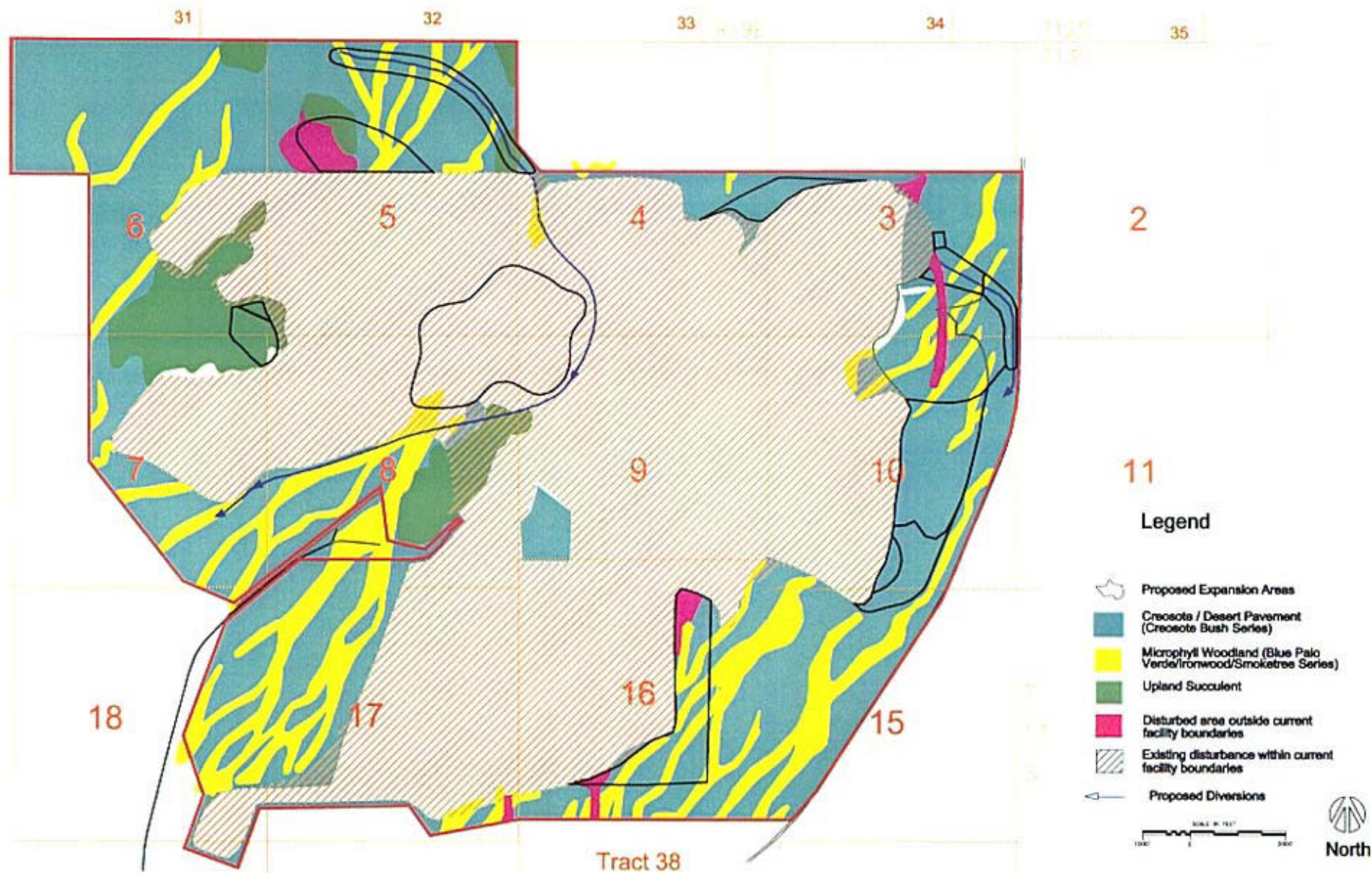
Microphyll woodland is also considered by CDFG to be an indicator of CDFG jurisdictional streambeds under section 1601 of the Fish and Game Code. The other indicators on-site are the desert washes. Portions of these woodlands are in areas already approved for disturbance and compensated in accordance with previous environmental mitigation.

Creosote/Desert Pavement

Creosote/desert pavement habitat falls within the creosote bush series. This series is characterized by widely spaced creosote bush (*Larrea tridentata*) as the dominant vegetation. Other plants potentially occurring in fewer numbers are brittle bush (*Encelia farinosa*), many-headed barrel cactus (*Echinocactus polycephalus* var. *polycephalus*), cholla, Mormon tea (*Ephedra*), indigo bush, and white bursage (*Ambrosia dumosa*). This series is usually associated with large areas of desert pavement. Within the project area, this vegetation series is found in the areas between the washes and is dominated by creosote bush.

Upland Succulent

Upland succulent habitat are those upland areas that would most likely also be included in the creosote bush series but were different enough in vegetation to be dealt with independently. These areas have a distinct lack of vegetation. Within the project area, this vegetation series is found within the hilly higher elevation areas on site and contains ocotillo, cholla species, and red brome.



SOURCE: Nevada Environmental Consultants, Inc., 1999

7/7/00

Mesquite Mine Expansion EIR/EIS

Existing Vegetation Communities

FIGURE

3.3-1

Proposed Expansion Areas

The topography surrounding the mine consists of gently rolling hills interwoven with washes of varying depth. Soil is gravelly and overlain with larger basaltic rocks. There are several dirt roads that lead onto the property which have been used for travel to and from exploratory drill sites and by recreational off highway vehicles. Soil surrounding the drill sites in some locations has been displaced. The following describes the existing biological environment for each of the proposed expansion areas. Figure 3.3-1 shows the existing habitat communities within the proposed expansion areas.

North Extension (51.2 Acres)

Off-road vehicle traffic, as well as exploratory drilling, has disturbed this area. The area is hilly and littered with rocks, cobbles and boulders of varying size. The lower elevations consist of sandy washes and desert pavement, with large boulders and in-situ rock outcrops at the higher elevations. The vegetation associated with this area is sparse, with creosote bush and ocotillo representing the dominant species. Microphyll woodland exists in the lower elevation washes of this area but it is very sparse and is not likely to provide much cover for wildlife. Due to the rocky nature of the area, some habitat for animals such as the chuckwalla does exist.

North Drainage Diversion (45.3 Acres)

The area covers a long and narrow projection that runs perpendicular to the existing washes in the area, and is made up alternately of desert pavement and sandy washes. Some of the washes are more than 10 feet deep and exhibit very steep, almost vertical banks. The only noticeable disturbance in this area consists of the rarely used off-highway vehicle trails. Vegetation in this area is fairly diverse. Patches of microphyll woodland exist within the washes. These woodland patches, combined with the steep banks of the washes, provide cover and shade for larger animals. Tracks of coyotes, bobcat, and mule deer are common in the sandy wash bottom. The lands adjacent to the washes are generally flat and open with large portions exhibiting little or no vegetation at all.

Proposed East Rainbow North Overburden/Interburden Storage Area (22 Acres)

This area is made up primarily of desert pavement, with two or three small sandy washes and one large deeply cut wash running through it. Dirt roads as well as several foundations for small buildings are present in this area. Within the wash areas, desert plants commonly associated with sandy areas can be found. Many of the wash banks exhibit signs of rodent burrows. The topography in this area is generally flat with rocky outcroppings in the vicinity of the wash that could provide habitat for chuckwalla as well as perching sights for birds such as the red-tail hawk.

East Rainbow Drainage Diversion (32.8 Acres)

The east drainage area mainly consists of desert pavement intersected by wide shallow sandy washes. The soil is sand mixed with small gravel. There is one access road that passes through this area and it is bordered on the east by the property fence. The washes in the East Drainage Diversion area

exhibit microphyll woodland patches. These woodland patches could provide shade for larger mammals as well as nesting sites for birds.

East Rainbow Extension (126 Acres)

The area mainly consists of desert intersected by wide, shallow, sandy washes. The soil is sand mixed with gravel. Only one access road passes through this area. There is very little elevation change within this area. The washes in this area exhibit microphyll woodland patches. The dominant vegetation within these woodland patches are palo verde and ironwood. These woodland patches provide shade for larger mammals as well as nesting sites for birds. The desert pavement areas are more sparsely vegetated, with the dominant vegetation being creosote bush.

East Rainbow South Overburden/Interburden Storage Area (132.1 Acres)

This area mainly consists of desert intersected by wide, shallow, sandy washes. The soil is sand mixed with small gravel. There is a berm surrounding the majority of this parcel as well as one access road that passes through it. A large wash runs through the center of this area. Unlike the other washes in this region, the wash in this area does not exhibit the typical microphyll woodland patches. With the exception of one or two small patches, the washes here are generally bare of vegetation and exhibit signs of scouring.

3.3.1.3 Wildlife

High average temperatures, sparse precipitation and limited vegetation cover impose constraints on the productivity of the area as wildlife habitat. The wildlife present consists primarily of common and widespread desert species adapted to severe desert conditions of heat, drought, and wind. With annual plants comprising a significant portion of the flora, a distinct seasonal element is correlated with animal activity. Birds tend to use the area for nesting in early spring, but most species tend to disperse to more favorable habitats during the summer and fall. Mammals are present year round, with the exception of migratory bats, which occur only seasonally. The proposed site is not identified as part of a known or probable wildlife corridor (Imperial County, 1993b).

No permanent water sources are present in the vicinity, although ephemeral ponds can occasionally occur as a result of heavy precipitation or runoff where there are undrained depressions, such as in gravel pits or adjacent to roads.

The Lower Colorado River Valley (LCRV) and Colorado Desert are important habitat features for the migration of birds to and from Mexico, Central, and South America (Small, 1974; and Rosenberg *et al.*, 1991). Habitat loss and disturbance along the LCRV has dispersed avian species into surrounding desert microphyll woodlands. Consequently, the microphyll woodland community at the Proposed Action site is potentially important for both resident and migratory birds. Animal species encountered or expected on-site are, for the most part, common species of desert microphyll woodland, creosote bush scrub and upland succulent communities. Species encountered in the biological surveys are listed in NECI Biological Report, 2000. Twenty wildlife species were observed

on-site during field surveys conducted on April 14-16, 1999, within all seven of the proposed expansion areas.

Birds

Twelve species of birds were observed within the project area. The greatest number of species utilize the reaches of the desert microphyll woodland communities. Species observed included the ash-throated flycatcher (*Myiarchus cinerascens*); black-tailed gnatcatcher (*Poliophtila melanura*); common ground dove (*Columbina passerina*); greater roadrunner (*Geococcyx californianus*); orange-crowned warbler (*Vermivora celata*); lesser nighthawk (*Chordeiles acutipennis*); mourning dove (*Zenaida macroura*); white-winged dove (*Z. asiatica*); rock wren (*Salpinctes obsoletus*); redbill hawk (*Buteo jamaicensis*); turkey vulture (*Cathartes aura*); and, Costa's hummingbird (*Calypte costae*). Several other bird species are expected to occur in the project area based on habitat requirements and known species range.

Mammals

Two mammal species were observed during the field surveys. Recent mule deer (*Odocoileus hemionus*) scat and tracks were observed in all of the wash areas within the proposed expansion areas. The black-tailed jackrabbit (*Lepus californicus*) was also frequently observed. NECI Biological Report, 2000 provides a list of wildlife species observed during the field surveys. Although not observed during the surveys, the vicinity of the project site is considered to be an occasional Nelson's bighorn sheep (*Ovis canadensis*) use area, as the Chocolate Mountains are known to be a habitat area for the species. Coyotes (*Canis latrans*) and several bat species are also known to occur in the area.

Wildlife habitat and species at the proposed expansion areas are typical of the region for similar elevations and drainage conditions. Mammal species encountered or expected to occur are, for the most part, common species of desert microphyll woodland and creosote bush scrub.

Amphibians

No areas within the proposed expansion lands exhibited the extended pooling or ponding of water necessary to create suitable habitat for sensitive amphibian species (See NECI Biological Report, 2000). No sensitive amphibian species were observed during the surveys. However, the Couch's spadefoot toad (*Scaphiopus couchi*) is known to occur downslope of the project area, adjacent to the ISDRA.

Reptiles

Six reptile species were observed in the proposed expansion areas. The side-blotched lizard (*Uta stansburiana*), western whiptail (*Cnemidophorus tigris*), zebra-tailed lizard (*Callisaurus draconoides*), collared lizard (*Crotaphytus* spp.), desert iguana (*Dipsosaurus dorsalis*), and desert tortoise (*Gopherus agassizii*) were observed during the field surveys. The desert tortoise is a state and federal threatened species and is addressed in more detail in Section 3.3.1.4.

3.3.1.4 Endangered, Threatened and Other Sensitive Species

State- and federally-listed threatened and endangered species, and species federally-proposed for listing are discussed in this section. A complete list of all threatened, endangered, and proposed species with the potential to occur within the project area is provided in NECI Biological Report, 2000. Other special-interest species include CDFG Species of Special Concern (CSC). Animals designated CSC in California by CDFG and listed on the NDDDB are species that experts feel are declining through all or portions of their ranges. Other special-interest species include those listed by the CNPS and game species.

Vegetation

Plant species are categorized at the state and/or federal level. At the state level they are either listed in the California Endangered Species Act (CESA), or are listed by the California Native Plant Society (CNPS). At the federal level, they are either listed in the federal Endangered Species Act, or are listed by the Bureau of Land Management as species of concern. Only one sensitive plant species is known to occur in the project area. Threatened, endangered, CNPS-listed, and species of concern (SPOC) plants that may occur within the project area are listed in Table 3.3-1.

Surveys for plants listed in Table 3.3-1 were conducted on April 14-16, 1999, within all eight of the proposed expansion areas. Each area was divided into corridors ranging from 10 to 15 meters in width depending on terrain, and each of these corridors was walked by a field biologist. The only sensitive plant species observed within the proposed expansion areas was the fairy duster; however, suitable habitat exists within the proposed expansion areas for several other sensitive species. Figure 3.3-2 shows threatened, endangered and special status species observed in each proposed expansion area during the surveys.

Species Observed On-site

Fairy Duster

The fairy duster (*Calliandra eriophylla*) was the only sensitive plant species observed on-site during the surveys, and is listed as a CNPS List 2 species. The fairy duster prefers sandy washes and gullies below 1,000 feet and blooms February to May (Hickman, 1993). This type of habitat is prevalent within the Proposed Action areas and individuals of this species were observed within three of the expansion areas. More than 20 individuals were observed within the proposed "East Rainbow Overburden/Interburden" area, 5-10 individuals were observed in the proposed "East Rainbow Extension" area, and less than 20 individuals were observed in the proposed "Leach Expansion" area. In all three of these areas, this species was found along the edges of substantial washes.

Species Not Observed On-site but Could Occur

There are several sensitive plant species listed in Table 3.3-1 that were not observed during the surveys, but could potentially occur on-site because the property provides suitable habitat. These

Table 3.3-1

**Threatened, Endangered, CNPS-Listed, and
SPOC Plants That May Occur Within the Project Area**

Common Name	Scientific Name	Federal/State Status
Fairy duster	<i>Calliandra eriophylla</i>	CNPS#2 ¹
Ribbed cryptantha	<i>Cryptantha costata</i>	CNPS#4 ²
Winged cryptantha	<i>Cryptantha holoptera</i>	CNPS#4
Foxtail cactus*	<i>Escobaria vivipara</i> var. <i>alversonii</i>	CNPS, 1B, BLM Sensitive Species ³
Slender-lobed four o'clock	<i>Mirabilis tenuiloba</i>	CNPS#4
Munz cholla*	<i>Opuntia munzii</i>	CNPS, 1B, BLM Sensitive Species
Wiggin's opuntia*	<i>Opuntia wigginsii</i>	SPOC ⁴

Source: NECI, 2000; BLM review comments, 8/188/2000.

¹ CNPS #2= California Native Plant Society, "Rare or Endangered in California, More Common Elsewhere" (all plants on this list fall under the California Native Plants Protections Act).

² CNPS #4= California Native Plant Society, "Plants of Limited Distribution".

³ CNPS, 1B, BLM Sensitive Species= California Native Plant Society, Plants that are "Rare, Threatened or Endangered in California and Elsewhere".

⁴ SPOC = Federal species of concern

* species not likely on study areas (See NECI Biological Report, 2000).

include the ribbed cryptantha (*Cryptantha costata*) (CNPS List 4); winged cryptantha (*Cryptantha holoptera*) (CNPS List 4); and, slender-lobed four o'clock flower (*Mirabilis tenuiloba*) (CNPS List 4). The NECI Biological Report (2000) provides a complete description of sensitive species not observed during the surveys although suitable habitat is present.

Based on the field surveys, the property does not provide suitable habitat for any of the other sensitive species listed in Table 3.3-1 (See NECI Biological Report, 2000).

Reptiles

Species Observed On-site

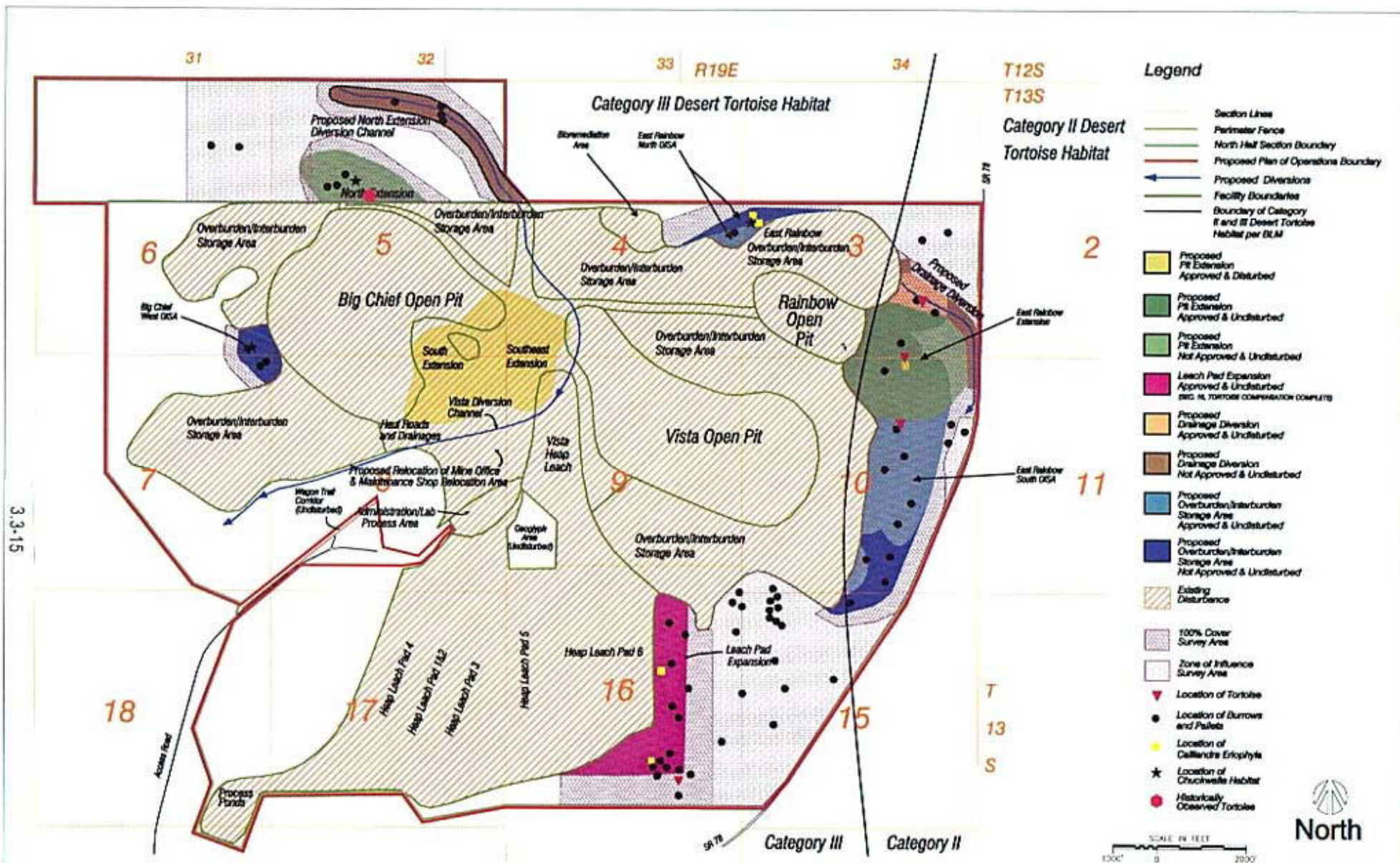
Desert Tortoise

The desert tortoise (*Gopherus agassizii*) is a federally-threatened, California-threatened, and BLM Species of Special Concern; and is known to occur on the site. Desert tortoise activity is seasonal, with peak active periods occurring in the spring between late March and early June, when ambient temperatures are moderate. Tortoise densities are generally highest in the creosote-white bursage community at lower elevations. However, less dense populations do occur in the higher elevation blackbrush community.

BLM habitat categories for desert tortoise, ranging in decreasing importance from Category I to Category III, were designed as management tools to assure future protection and management of these areas and their associated desert tortoise populations (U.S. Department of the Interior (U.S. DOI), 1988). Category I habitat areas are considered essential to maintenance of large viable populations, have primarily medium- to high-density populations, and have resolvable conflicts. Category II habitat "may be essential to the maintenance of viable populations." Category III habitat is defined as having a low to medium tortoise population density that is not contiguous with areas containing a medium to high density of tortoises (i.e. populations are generally stable or declining) and is outside of the designated critical habitat areas.

The BLM has classified the property and surrounding lands as containing both Category II and Category III tortoise habitat. Category boundaries relative to the proposed mine expansion areas are shown in Figure 3.3-2.

Desert tortoise surveys were conducted on April 14-16, 1999 within all of the proposed expansion areas. In May of 2000, the acreage of several proposed expansion areas was enlarged, and it was recognized that additional areas needed to be surveyed. On June 1, 2000, surveys were conducted on an additional 22 acres of land in the leach pad expansion area, and 9 acres in the East Rainbow South OISA. The surveys utilized survey methods that are currently acceptable to USFWS. Each area was divided into corridors ranging from 30-45 feet in width depending on terrain. The difference reflects safety issues associated with unstable wash banks and steep slopes. Biologists then surveyed each of the corridors in the proposed expansion areas, as well as a 350-foot buffer zone in undisturbed areas.



SOURCE: NECI, Newmont Mining Corp., 1999, 2000

7/7/00

Mesquite Mine Expansion EIR/EIS

Threatened, Endangered, and Special Status Species

FIGURE
3.3-2

While surveying, the biologists watched for all signs of tortoise activity including live animals, burrows, scat, and carcasses. Any burrows found were surveyed and mirrored to determine whether tortoises were present. All evidence observed was recorded and Global Position System (GPS) coordinates were taken where appropriate. Based on the field surveys, a total of 4 tortoises, 8 pallets and 59 burrows were observed throughout the proposed expansion areas and the 350-foot buffer zone (which will not be disturbed). (See NECI Biological Report, 2000).

On June 1, 2000, surveys were also conducted on adjacent lands within the zone of influence. These areas were surveyed in an attempt to quantify the number of tortoises that may be indirectly affected as a result of the proposed expansions. The zone of influence surveys were conducted in areas where the proposed disturbance was within 2,400 feet of the 8-foot high chain link perimeter fence along the northeast, east, south, and west portions of the Mine. Areas surveyed included lands north of the East Rainbow Diversion Channel, east of the East Rainbow Pit Extension, and east of the leach pad expansion. In addition, a zone of influence survey was completed west of the North Big Chief Pit Extension, and of the North Drainage Diversion. Zones of influence surveys were not completed in areas where tortoises have access to adjacent lands and tortoise-proof fencing would be utilized in order to reduce/avoid indirect impacts to tortoises. These areas include north of the East Rainbow OISA, east and south of the North Drainage Diversion, and north of the North Extension. In the zones of influence surveys, up to five transects were spaced at intervals of 100 feet, 300 feet, 600 feet, 1,200 feet, and 2,400 feet outside the proposed expansion areas. Biologists searched for all signs of tortoise activity including live animals, burrows, scat, and carcasses. All evidence observed was recorded. Any burrows found were mirrored to determine whether tortoises were present. The backs of all burrows were observed.

Another survey was conducted on April 16 and September 2, 1999 along Highway 78, where it runs adjacent to and parallel with the mine property line, to determine if tortoises are crossing Highway 78 and attempting to get under the mine fence. The fence was surveyed both in April and September in order to ensure that the fence was checked during the beginning and the end of the active season. Sensitive plant species were also surveyed during the desert tortoise surveys. No signs of tortoises, whether individuals or signs of burrowing under the fence, were observed during the surveys. The majority of the fence has a protective berm of soil heaped along the inside, which appears to serve as a deterrent to burrowing. Also, no sensitive plant species were observed during the survey. During the interim months, no signs of tortoise fatalities or activity were observed along this section of State Highway 78 by NECI or Mesquite Mine personnel.

An adult tortoise has been repeatedly sighted by mine personnel in the area of the proposed North Extension. This individual was not observed during the tortoise surveys but may still be utilizing this area as part of its home range.

Species Not Observed On-site but Likely to Occur

Only one sensitive reptile species that was not observed is expected to occur on-site, based on habitat requirements and known species range. This is the Western Chuckwalla (*Sauromalus obesus*), which is a federal species of concern and a BLM sensitive species. NECI Biological Report (2000) provides a

complete description of sensitive wildlife species that were not observed during the surveys but are likely to occur on-site.

Birds

Species Observed On-site

No sensitive bird species were observed on-site during the field surveys.

Species Not Observed On-site but Likely to Occur

There are several sensitive bird species that were not observed during the field surveys that could occur on-site based on existing nests in the project area, species range, and on-site habitat suitability. These include the burrowing owl (*Athene cunicularia*) (California Species of Special Concern); Le Conte's thrasher (*Toxostoma lecontei*) (California Species of Special Concern); and, prairie falcon (*Falco mexicanus*) (California Species of Concern). NECI Biological Report (2000) provides a complete description of sensitive wildlife species not observed during the surveys but could occur on-site.

Mammals

Species Observed On-site

Mule Deer

The mule deer (*Odocoileus hemionus*) is a listed California Game Mammal species known to occur in the project area. The mule deer in this region are members of a subspecies known as the burro deer (*Odocoileus hemionus eremicus*). Their range is delineated by the CDFG as Deer Zone D12. Recent mule deer scat and tracks were observed in all of the wash areas within the proposed expansion areas.

Suitable habitat exists within the entire project area. Migration corridors to and from the river follow the major wash systems where microphyll woodland can provide shade and cover. Scat and tracks were observed within all of the washes in the Proposed Action area.

Species Not Observed On-site But Which May Occur

There are several sensitive mammal species that were not observed during the field surveys that may occur on-site because the property provides suitable habitat. These include several bat species and the bighorn sheep. NECI Biological Report (2000) provides a complete description of sensitive wildlife species not observed during the surveys but are likely to occur on-site.

Bats

Several species of sensitive bats are known to utilize microphyll woodland wash systems as foraging corridors. Based on consultation with BLM, CDFG, Newmont Mining Corporation, and Dr. Pat Brown-Berry (a consultant biologist specializing in bat ecology), any disturbance to microphyll woodland could pose a potential risk to bat species roosting in the region.

To determine the presence of sensitive bat species in the project area, a survey was conducted of abandoned underground mines within eight miles of the Mine boundary, except for mines located in the Chocolate Mountain Gunnery Range. The survey included examining 7.5-minute topography maps for old mines, visiting the mines and determining whether they had the potential to harbor bat roosts. Based on the survey, three sites were identified in the region as potential or known roosting sites. Sensitive bat species observed within these three sites and likely to occur in the project area include California leaf-nosed bat (*Macrotus californicus*); greater western mastiff bat (*Eumops perotis*); southwestern cave myotis (*Myotis velifer brevis*); small-footed myotis (*Myotis ciliolabrum*); desert pallid bat (*Antrozous pallidus pallidus*); Townsend's big-eared bat (*Corynorhinus townsendii*) and, spotted bat (*Euderma maculatum*). A description of each of bats species, their protective status, and the locations where they have been observed is provided in NECI Biological Report (2000).

Bighorn Sheep

The bighorn sheep (*Ovis canadensis*) is a listed California Game Mammal and BLM sensitive species known to occur in the region. The bighorn sheep is listed on the CDFG NDDDB list of special animals because of concern about population setbacks due to disease, diminished survival, and habitat loss.

Bighorn sheep occur on open slopes in hot and dry desert regions where the land is rough, rocky, sparsely vegetated, and characterized by steep slopes, canyons, and washes. Most of these sheep live between 300 and 4,000 feet (ft) in elevation where average annual precipitation is less than 4 inches (in) and daily high temperatures average 104 degrees Fahrenheit in the summer. Alluvial fan areas are also used for breeding and feeding activities. Bighorn sheep populations typically aggregate from May through October due to a combination of breeding activities and diminishing water sources.

The proximity of the proposed expansion area to the Chocolate Mountains combined with the elevation make the proposed expansion areas suitable habitat for bighorn sheep. Bighorn sheep have been seen within a mile and a half of the mine property and have even been observed crossing into the Algodones Dunes area (Andrew, 1999). Mine personnel have not recorded seeing a bighorn sheep on the mine property since the beginning of mining in 1984.

This page left intentionally blank.

3.4 CULTURAL RESOURCES

"Historic properties include districts, sites, buildings, structures and objects significant in American history, architecture, archeology, engineering and culture" (36 CFR Part 60.1). These resources may be important for scientific, historic or religious reasons to cultures, communities, groups or individuals. Cultural resources within the area of the proposed Mesquite Mine expansion are comprised of prehistoric and historic archeological sites, including isolated resources.

3.4.1 Introduction

A cultural resource investigation was conducted by Mooney & Associates during March, April, July and August 1999. The investigation included archival records search, field survey, cultural resource inventory and focused subsurface testing of potentially affected historic properties within the 490-acre area of potential effect (APE). The following discussion of cultural resources presents a summary of information provided in the *Final Cultural Resources Assessment and Evaluation of the Proposed Mesquite Mine Expansion: Imperial County, California*, prepared by Mooney & Associates (September 16, 1999; February 2000).

To date, more than 17 archaeological reports of survey, inventory, testing and data recovery programs have been completed for the Mesquite Mine and areas associated with developing the mine since the 1970s. The APE for the Proposed Action is shown on Figure 3.4-1.

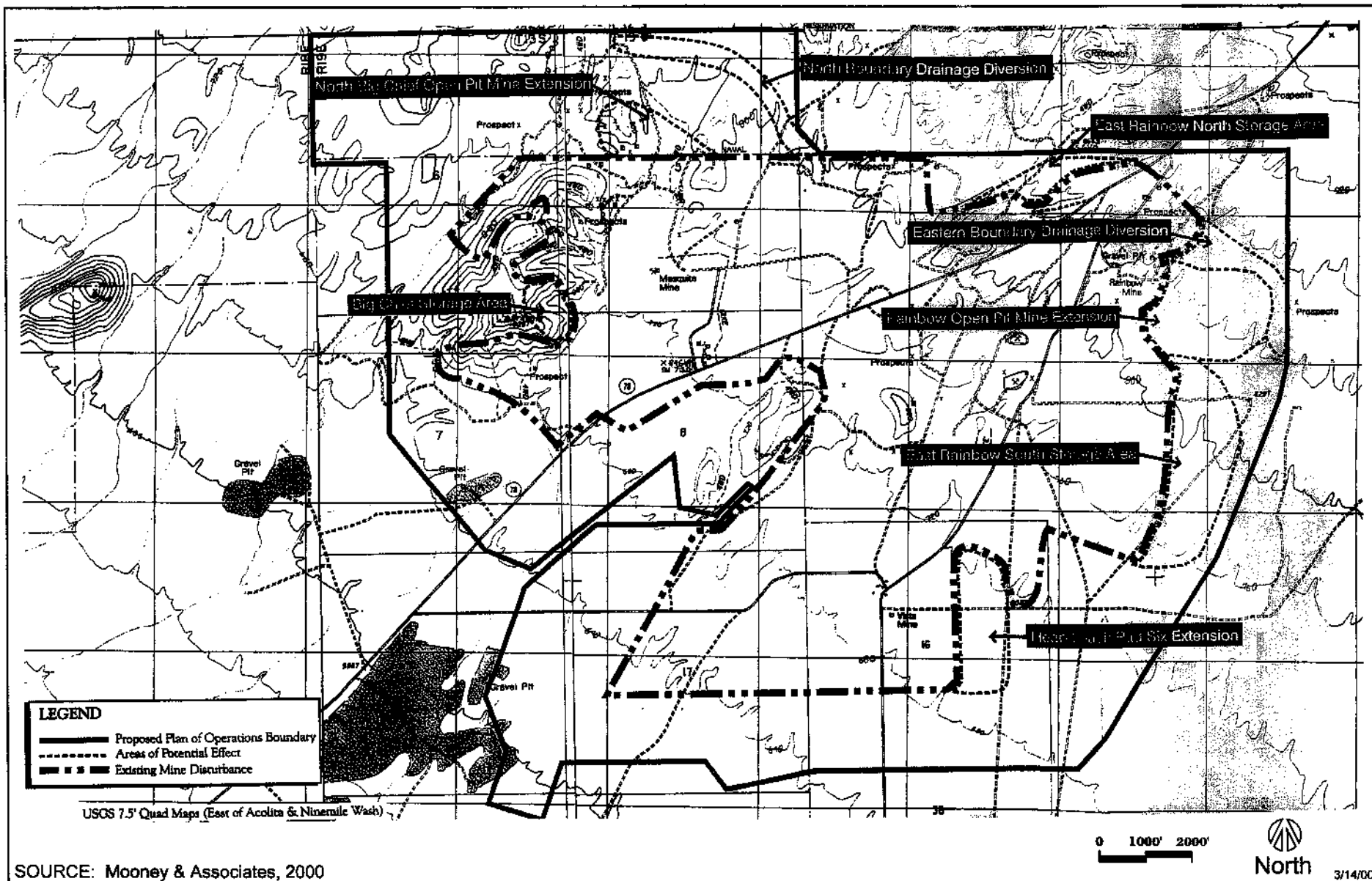
3.4.2 Affected Environment

3.4.2.1 Cultural History

The Proposed Action is located in the Colorado Desert, where six successive cultural patterns may be defined, extending back in time over a period of at least 12,000 years. These patterns are: 1) Malpais (Early Man), 2) San Dieguito, 3) Pinto and Amargosa, 4) Patayan (prehistoric Yuman), 5) Ethnohistoric Yuman and 6) Historic Euroamerican. The area of the Colorado Desert in the vicinity of the Mesquite Mine has been subject to widespread historic gold mining activities since the mid-1800s. Mining was halted by the second War Powers Act of 1942, when the area became part of the training grounds for the Desert Training Center, which included extensive desert combat and survival training, and full-scale combat exercises. Mining activities resumed after the war and have continued to the present.

3.4.2.2 Cultural Resources Survey

A Class III cultural resources survey of the 490-acre APE for the proposed mine expansion was conducted March 29 through April 2, 1999. Subsequent testing and enhanced recordation were conducted during July and August 1999. The cultural resources inventory and evaluation was conducted in consultation with and the field assistance of, the Quechan Tribe of the Fort Yuma Indian Reservation in Winterhaven, California. While exercising its responsibility for



SOURCE: Mooney & Associates, 2000

Mesquite Mine Expansion EIR/EIS

Areas of Potential Effect (APE)

FIGURE

3.4-1

Native American consultation, BLM approved Mooney & Associates to request assistance from the Quechan Cultural Committee in identifying properties which may be of religious or cultural significance to the Quechan. The Quechan Cultural Committee did not indicate to the BLM or Mooney & Associates that there are such properties within the APE.

The records review and intensive ground survey identified 40 areas of cultural activity, of which 11 had been recorded previously, and 29 were new. Of these 40 indicators of cultural activity, 31 were sites more than 50 years old, two were less than 50 years old, and seven were isolates. After eliminating from further consideration four sites that were outside the APE, the two recent sites, and seven isolates, a total of 27 sites were evaluated for eligibility to the National Register, including sparse lithic scatters, a lithic scatter with pottery, a lithic scatter with stacked rock feature and mining prospect, two temporary camps, and a trail segment with cleared circle and rock cairns. After intensive recordation and application of the California Archaeological Resource Identification and Data Acquisition Program, where appropriate, 20 sites were found to not meet criteria for eligibility to the National Register. The remaining seven sites were subjected to additional recording and limited testing, following approval by BLM.

Implementation of the test plan resulted in the collection of additional documentation. This information was then analyzed and incorporated into the resource inventory for the Proposed Action. Site record files were revised as necessary. As a result of this process, the research potential of the seven identified resource sites has been documented. BLM determined these sites do not meet criteria of eligibility to the National Register of Historic Places.

This page left intentionally blank.

3.5 PALEONTOLOGICAL RESOURCES

3.5.1 Mesquite Mine

The geology of the site is described in detail in Section 3.1.1. The nature and origin of the geologic formations on-site is such that no significant paleontological resources would be expected to exist. The various rock units present at the site show no evidence that they contain fossils. The alluvial material on the site is too young to contain significant fossils and was deposited in such a high-energy manner that it would not be expected to retain fossils. The Bear Canyon Conglomerate was also deposited in a high-energy manner and would not be expected to retain fossils. There are some lacustrine clay deposits in the Bear Canyon Conglomerate, but that formation has only been exposed in the Mesquite Mine pits, and there has been no evidence to indicate it contains fossils. Basement rock consists of metamorphic and igneous rocks, which do not contain fossils.

This page left intentionally blank.

3.6 TRANSPORTATION

3.6.1 General

3.6.1.1 Scope

Figure 3.6-1 shows the primary transportation features in the Imperial County area. The transportation system consists of a network of rural highways that provides access through this sparsely populated desert region. The Mesquite Mine is located in the east-central portion of Imperial County in an area that normally has little vehicular traffic other than mine employees. The region immediately surrounding the mine does not include a civilian airport, though the mine does have a FAA approved heliport for emergency purposes.

Traffic conditions in the mine area are sparse, with State Highway 78 (SR 78) and Ogilby Road both operating at substantially below their design capacities (i.e., less than 5 percent of capacity). Mine related traffic is episodic, corresponding primarily to employee shift changes, though intermittent mine delivery traffic occurs throughout each day.

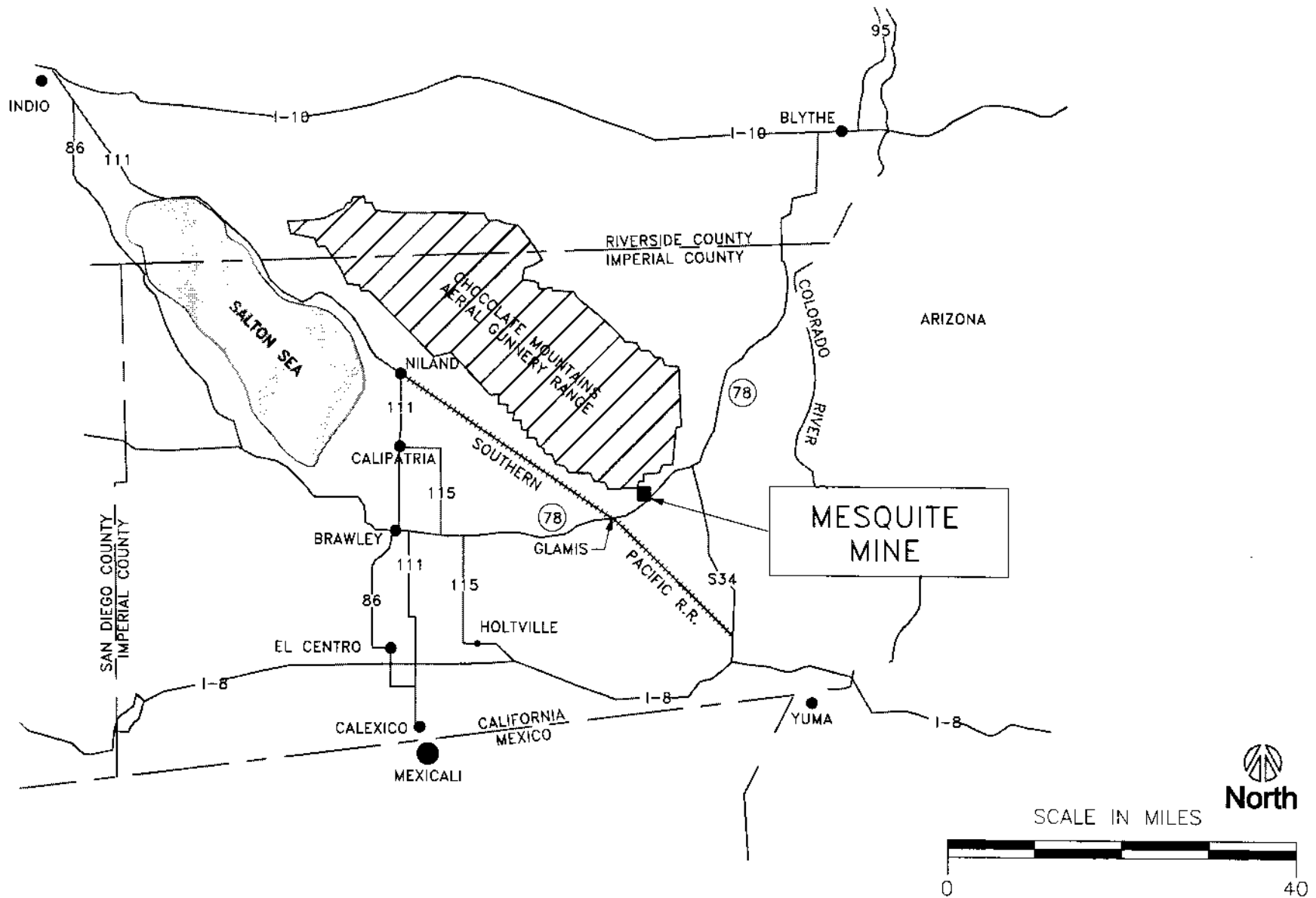
3.6.1.2 Regulatory Status

No alterations or impacts to road conditions will result from the Project, and no regulatory approval is required from Caltrans or the Imperial County Department of Public Works. Like the current Mesquite Mine Operation, the Proposed Action would be subject to the California Vehicle Code, enforced by State and County law enforcement officials. Caltrans has been a cooperating agency in the EIR/EIS review process for the proposed expansion project.

3.6.2 Highways

Imperial County is served by a system of interstate, state and county highways shown in Figure 3.6-1. The two major east-west routes include Interstate 8 (I-8) and State Route (SR) 78 across the southern and central portions of the county. SR 78 is a two-lane road that connects the populated portion of Imperial County to Blythe in Riverside County.

The primary north-south routes are SRs 86, 111 and 115, and County Road S34 (Ogilby Road). SRs 86, 111 and 115 are for the most part two-lane roadways that provide access between I-8 and SR 78 in the Brawley, El Centro and Holtville portion of central Imperial County. Ogilby Road is also a two-lane road that provides access between I-8 and SR 78 in the eastern portion of the county. State Highways 86 and 111 continue northwest past SR 78 along opposite sides of the Salton Sea until they eventually join just south of the city of Indio, near I-10 in Riverside County.



SOURCE: Newmont Mining Corporation, 1999

7/7/00

Mesquite Mine Expansion EIR/EIS

Primary Transportation Routes in the Imperial County Area

FIGURE
3.6-1

Access to the mine is via SR 78, which extends along the southern border of the mine property boundary. The mine access road provides access for all visitors, employees and deliveries to the mine.

Several unpaved roads exist east of the mine site. These roads are infrequently traveled and are used primarily for access by gravel operators and as a limited (Restricted) access route into the aerial gunnery range, north of the project area. The unpaved roads are occasionally used for off-road vehicle recreation activities.

Traffic volumes on SR 78 are approximately 1,600 trips per day in the project area (Caltrans, 1998). A "trip" is the passage of one vehicle in either direction across a particular location.

Typical peak hourly traffic volumes are associated with the peak Mesquite Mine employee trips. During these periods, the flow rate on SR 78 in the project area is estimated to be approximately 390 vehicles per hour, resulting in a level of service (LOS) of A (free flowing traffic with little delay). LOS is determined by the amount of traffic on roadways from A to F, A being the best, free flowing traffic, and F being the worst with gridlock and congestion. During the afternoons before and mornings after holiday weekends from October 1st through May 31st, anecdotal accounts indicate that the level of service on SR 78 in the project area may reach F (forced flow with frequent delay); however, specific data to confirm or refute this was not identified. The vast majority of the increased weekend traffic occurs to or from the west, as campers arrive from the more heavily populated areas of Southern California, and later depart in that direction at the end of the weekend. The design capacity of the stretch of SR-78 that extends past the project site is 2,800 trips per hour, or more than 60,000 trips per day (Caltrans, 1992).

This page left intentionally blank.

3.7 NOISE

3.7.1 Introduction

3.7.1.1 Scope

The Proposed Action site is located in an area that has no permanent residents and very few activities that generate substantial noise events. Noise generating activities that exist in the vicinity include:

- The passage of traffic on SR 78.
- Infrequent military aircraft performing maneuvers associated with the CMAGR located immediately to the north.
- Small-scale gravel withdrawal activities in the area to the west of the project site.
- The passage of trains on the Southern Pacific Railroad Main Line located to the west of the Glamis Beach Store.
- Off-road vehicle (ORV) activities, primarily at the Imperial Sand Dunes Recreation Area (ISDRA) near the Glamis Beach Store during weekend periods.

Project-related noise generating activities would occur on the mine site only. Potential receptors include Mesquite Mine employees and visitors, gravel withdrawal operators, campers who use the public lands west of the Proposed Action area, people in vehicles traveling along SR 78, and wildlife in the area. The nearest permanent residents number approximately 10 in the Boardman and Glamis Store areas, about 3 and 3.5 miles away, respectively. Due to their distance from the mine, project-related noise events would not be heard in those areas. As a result, the residents of these areas are not part of the definable group of potential receptors for noise from the project site.

Regulatory Status

Depending upon the source, regulation of noise levels can occur at the federal, state or local level. Except for normal vehicle noise restrictions (e.g., for delivery and passenger vehicles), the only noise ordinances that would apply to the mine result from the Mine Safety and Health Administration (MSHA). The California Department of Health Services, Office of Noise Control, provides guidelines to communities to control and abate noise. County noise management occurs through the Imperial County General Plan. The following laws and regulations would apply to noise generated by mining activities in the proposed expansion areas:

- Noise Control Act of 1972 (42 U.S.C. 4901 et seq.).
- Imperial County General Plan and Imperial County General Plan Update adopted November 1993.

3.7.2 Project Area

3.7.2.1 Mesquite Mine

The Mesquite Mine is the primary source of noise currently generated in the project area. Substantial noise events at the Mesquite Mine are the result of:

- Ore and overburden removal and handling.
 - Drilling
 - Blasting
 - Ore and overburden loading, hauling, and dumping
- Construction of haul roads and structures
 - Earthmoving equipment
 - Construction equipment

These operations are conducted using equipment and procedures that satisfy all Mine Safety and Health Administration (MSHA) noise requirements. Receptors for these noises are mostly the mine workers, users of the Mesquite Mine Overlook Trail, and occasionally SR 78 travelers as they pass through the area.

3.7.2.2 Chocolate Mountain Aerial Gunnery Range

The Chocolate Mountain Aerial Gunnery Range (CMAGR) is used for live munitions delivery practice by different branches of the U.S. armed forces. The CMAGR boundary begins approximately one mile to the north of the Proposed Action boundary. Intermittent aircraft noise can be heard throughout the area as military aircraft fly in and out of the region. Occasionally, the faint sound of exploding munitions can be heard in the distance.

3.7.2.3 State Route 78 (SR 78)

SR 78 extends through the Glamis Beach Store area and then northeastward for 3 miles before it passes along the southern edge of the Proposed Action boundary (Figure 2.1.2-1). Traffic along this section of SR 78 is light (1,600 trips per day; Caltrans, 1998) and, except for the Glamis Beach Store, the vicinity is deserted with the only noise events associated with occasional passing traffic.

3.7.2.4 Off Highway Vehicle Recreation

During the period of October 1st to May 31st, the Glamis Beach Store area attracts many visitors, especially on weekends, for off-road recreation in the Imperial Sand Dunes Recreation Area. During these periods, traffic increases significantly and noise events associated with OHV recreation and related traffic increases.

3.7.2.5 Gravel Withdrawal Operations

A small number of gravel withdrawal operators do conduct intermittent surficial gravel withdrawal operations in the region to the west of the project area. Noise from these infrequent activities is generated by excavation activities and transfer trucks which arrive and carry mined materials out of the area. These activities occur in deserted areas and any noise generated is seldom heard beyond the immediate area of a particular mining operation. The gravel excavation activities are conducted under a permit from the BLM.

3.8 AIR QUALITY

3.8.1 Introduction

3.8.1.1 Scope

This section describes the affected air quality environment in the vicinity of the Proposed Action.

The primary air quality issues directly associated with the Proposed Action are those related to onsite activities, including:

- Drilling, blasting, and loading of overburden/interburden and ore.
- Hauling of overburden/interburden to out-of-pit overburden/interburden storage areas (OISAs), and ore to heap leach pads.
- Heap leaching of ore.
- Processing of leach solution to extract gold.

The air quality aspects of each of these activities are evaluated in this EIR/EIS.

Off-site air quality considerations related to the Proposed Action are associated with emissions from vehicles used by commuting employees, and from trucks delivering goods to the mine. These emissions are also considered in this analysis.

For analysis of onsite and offsite air quality, the affected environment is described in terms of the Proposed Action site, and the Imperial County portion of the Salton Sea Air Basin.

An important introductory scoping consideration is related to ozone, which is the key pollutant in smog. Ozone itself is not emitted directly from cars, factories, and other sources, but instead is formed in the presence of sunlight from two "precursor" pollutants that are emitted from these sources: oxides of nitrogen (NO_x) and reactive organic compounds (ROC). Exceedances of state ambient air quality standards for ozone occur only a few times a year in Imperial County. The causes of ozone exceedances in Imperial County appear to include pollutant transport from Mexicali (Mexico), South Coast Air Basin (SOCAB), and possibly San Diego County (CARB, 1989, 1993a, 1993b, 1996). Local emissions also contribute to ozone exceedances in Imperial County (Sonoma Technology, Inc., 1992).

Transport is also important to particulate exceedances in Imperial County. A study by the Desert Research Institute (1995) determined that emissions in Mexicali contribute to particulates measured at Calexico, El Centro, and Brawley.

3.8.2 Regulatory Setting

3.8.2.1 General

Applicable federal, state, and local laws, regulations, and standards that govern air quality and air pollution are discussed in this section. Specific requirements are identified. Compliance of the Proposed Action with these requirements is demonstrated either in this section or in Section 4.1.8.4.

Primary air quality regulatory jurisdiction for the Proposed Action resides locally with the Imperial County Air Pollution Control District (ICAPCD or District). District rules, which have been developed as a result of federal and state laws and regulations, determine allowable amounts of stationary source emissions. The following paragraphs summarize general federal and state requirements, and site-specific District permitting requirements.

3.8.2.2 Laws, Regulations and Standards

Each level of government has adopted specific regulations that limit emissions from the Proposed Action. Contact information for the agencies with air quality control authority for the Proposed Action are shown in Table 3.8-1. The underlying laws, regulations, and standards are summarized in Table 3.8-2. The authority, purpose, and administering agency for each of these is discussed in more detail below.

Federal

The United States Environmental Protection Agency (EPA) implements and enforces the requirements of most federal environmental laws. EPA Region 9, which has its offices in San Francisco, administers EPA programs in California.

The Clean Air Act of 1970 established National Ambient Air Quality Standards (NAAQS) that set maximum allowable ambient concentrations, given in Table 3.8-3, for the following "criteria" air pollutants: ozone, nitrogen dioxide (NO₂), sulfur dioxide (SO₂), carbon monoxide (CO), particulate matter with aerodynamic diameter less than 10 micrometers (PM₁₀), particulate matter with aerodynamic diameter less than 2.5 micrometers (PM_{2.5}), and lead (Pb). Areas exceeding the primary (i.e., health-related), standard of a criteria pollutant a specified number of times during a specified period of time (e.g., 3 years) are designated "nonattainment" for that pollutant.

The Clean Air Act Amendments of 1990 defined five classes of increasing nonattainment: marginal, moderate, serious, severe, and extreme. Emissions of criteria air pollutants or precursors (e.g., NO_x, and ROC are precursors of ozone and PM₁₀, while SO_x is a precursor of PM₁₀) in nonattainment areas generally cannot be permitted without elimination of at least an equal amount of the same pollutant or its precursors through "offsets." Areas that do not attain the NAAQS are required by the Clean Air Act to prepare Air Quality Attainment Plans to control existing and proposed sources of air pollutant emissions, such that the NAAQS may be attained by a certain target date. Regulations must

Table 3.8-1
Air Quality Control Agencies

Agency	Authority	Contact
U.S. EPA Region 9	Oversight of Permit Issuance Enforcement	Matt Haber, Chief Permits Office U.S. EPA Region IX 75 Hawthorne Street San Francisco, CA 94105 (415) 744-1254
California Air Resources Board	Regulatory Oversight	Ray Menebroker, Chief Project Assessment Branch California Air Resources Board 2020 L Street Sacramento, CA 95814 (916) 322-6026
Imperial County Air Pollution Control District	Permit Issuance Enforcement	Stephen Birdsall Air Pollution Control Officer Imperial County Air Pollution Control District 150 South Ninth Street El Centro, CA 92243 (760) 339-4606

Source: TRC, 2000.

Table 3.8-2

Laws, Regulations, Standards And Permits For Protection Of Air Quality

Law, Regulation or Standard	Purpose	Regulating Agency	Permit or Approval	Schedule and Status of Permit	Conformance (Section)
Federal					
Clean Air Act (CAA) §160-169A and Implementing Regulations, Title 42 United States Code (USC) §7470-7491 (42 USC 7470-7491), Title 40 Code of Federal Regulations (CFR) Parts 51 & 52 (40 CFR 51 & 52) (Prevention of Significant Deterioration Program)	Requires prevention of significant deterioration (PSD) review and facility permitting for construction of new or modified major stationary sources of air pollution. PSD review applies to attainment pollutants for which ambient concentrations are lower than NAAQS.	EPA	Authority to Construct (ATC).	Agency approval to be obtained before start of construction.	Compliance with Federal Requirements p. 4.1.8-34
CAA §171-193, 42 USC §7501 et seq. (New Source Review)	Requires new source review (NSR) facility permitting for construction or modification of specified stationary sources. NSR applies to pollutants for which ambient concentration levels are higher than NAAQS.	ICAPCD with EPA oversight.	ATC.	Agency approval to be obtained before start of construction.	
CAA §501 (Title V), 42 USC §7661 (Federal Operating Permits Program)	Establishes comprehensive permit program for major stationary sources.	ICAPCD with EPA oversight.	Issues Title V permit after review of application.	Permit not needed.	Page 3.8-18 of Section 3.8.2.3
CAA §111, 42 USC §7411, 40 CFR Part 60 (New Source Performance Standards - NSPS)	Establishes national standards of performance for new stationary sources, including emission limits.	ICAPCD with EPA oversight.	ATC.	No applicable NSPS.	Page 3.8-18 of Section 3.8.2.3
CAA § 112, 42 USC § 40 CFR Part 63 (National Emission Standards for Hazardous Air Pollutants- NESHAPS)	Establishes emission limits for noncriteria pollutants from specified source categories.	ICAPCD with EPA oversight.	ATC.	No applicable NESHAP.	

Table 3.8-2
Laws, Regulations, Standards And Permits For Protection Of Air Quality

Law, Regulation or Standard	Purpose	Regulating Agency	Permit or Approval	Schedule and Status of Permit	Conformance (Section)
Conformity Regulations, 40 CFR 51, Subpart W, Sections 51.851- 51. 860	Determine that nonattainment and maintenance criteria pollutant emissions resulting from a Federal action conform to applicable state Implementation Plan.	ICAPCD with EPA oversight.	ATC.	Agency approval to be obtained before start of construction.	
State					
H&SC §44300-44384; California Code of Regulations (CCR) §93300-93347 (Toxic "Hot Spots" Act)	Requires preparation and biennial updating of facility emission inventory of hazardous substances; risk assessments.	ICAPCD with CARB oversight.	ATC.	HRA included in EIR.	TBC
Local					
ICAPCD Rule 207 - New and Modified Stationary Source Review	NSR and PSD: Requires that preconstruction review be conducted for all proposed new or modified sources of air pollution, including BACT, emissions offsets, and air quality impact analysis.	ICAPCD with CARB oversight.	ATC.	Agency approval to be obtained before start of construction.	TBC
ICAPCD Rule 900 - Procedures for Issuing Permits to Operate for Sources Subject to Title V of the Federal Clean Air Act Amendments of 1990	Implements operating permits requirements of CAA Title V.	ICAPCD with EPA oversight.	Issues Title V permit after review of application.	Not needed.	--

Table 3.8-2

Laws, Regulations, Standards And Permits For Protection Of Air Quality

Law, Regulation or Standard	Purpose	Regulating Agency	Permit or Approval	Schedule and Status of Permit	Conformance (Section)
Local (Cont'd)					
ICAPCD Rule 400 - Fuel Burning Equipment	Limits emissions of sulfur compounds, NO _x , and combustion contaminants.	ICAPCD with ARB oversight.	ATC.	ATC approval precedes construction.	TBC
ICAPCD Rule 401 - Opacity of Emissions	Limits visible emissions to no darker than Ringelmann No. 1 for periods greater than 3 minutes in any hour.	ICAPCD with ARB oversight.	ATC.	ATC approval precedes construction.	TBC
ICAPCD Rule 403 - Quantity of Emissions	Limits emissions of air contaminants from any single processing unit source.	ICAPCD with ARB oversight.	ATC.	ATC approval precedes construction.	TBC
ICAPCD Rule 404 - Particulate Matter	Limits PM emissions.	ICAPCD with ARB oversight.	ATC.	ATC approval precedes construction.	TBC
ICAPCD Rule 405 - Sulfur Compounds	Limits SO ₂ emissions to <2,000 ppmv.	ICAPCD with ARB oversight.	ATC.	ATC approval precedes construction.	TBC
ICAPCD Rule 406 - Specific Contaminants	Limits combustion particulate concentration at discharge point.	ICAPCD with ARB oversight.	ATC.	ATC approval precedes construction.	TBC
ICAPCD Rule 407 - Nuisances	Prohibits emissions that annoy or adversely affect public health, safety, other businesses, or property.	ICAPCD with ARB oversight.	ATC.	ATC approval precedes construction.	TBC
ICAPCD Rule 216 - Construction or Reconstruction of Major Stationary Sources That Emit Hazardous Air Pollutants	Requires T-BACT for major sources.	ICAPCD with ARB oversight.	ATC.	ATC approval precedes construction.	TBC

Table 3.8-2

Laws, Regulations, Standards And Permits For Protection Of Air Quality

Law, Regulation or Standard	Purpose	Regulating Agency	Permit or Approval	Schedule and Status of Permit	Conformance (Section)
Local (Cont'd)					
ICAPCD Rule 925- General Conformity	Determine that nonattainment and maintenance criteria pollutant emissions resulting from a Federal action conform to applicable State Implementation Plan.	ICAPCD with EPA oversight.	ATC.	ATC approval precedes construction.	TBC

Source: TRC, 2000.

Table 3.8-3
Ambient Air Quality Standards
Mesquite Mine Expansion

Pollutant	Averaging Time	California Standards (CAAQS)(1)		National Standards (NAAQS) (2)		
		Concentration(3)	Method(4)	Primary(3)(5)	Secondary (3)(4)(6)	Method(7)
O ₃	1 Hour	90 ppbv (180 µg/m ³)	Ultraviolet Photometry	120 ppbv (235 µg/m ³)	Same as Primary Standards	Ethylene Chemiluminescence
	8 Hour	--	--	0.08 ppmv (3-year average of annual 4 th -highest daily maximum)	--	
CO	8 Hour	9 ppmv (10 mg/m ³)	Nondispersive Infrared Spectroscopy (NDIR)	9 ppmv (10 mg/m ³)	--	NDIR
	1 Hour	20 ppmv (23 mg/m ³)		35 ppmv (40 mg/m ³)		
NO ₂	Annual Average	--	Gas Phase Chemiluminescence	53 ppbv (100 µg/m ³)	Same as Primary Standards	Gas Phase Chemiluminescence
	1 Hour	250 ppbv (470 µg/m ³)		--		
SO ₂	Annual Average	--	Ultraviolet Fluorescence	30 ppbv (80 µg/m ³)	--	Pararosaniline
	24 Hour	50 ppbv (131 µg/m ³)(8)		140 ppbv (365 µg/m ³)	--	
	3 Hour	--		--	500 ppbv (1,300 µg/m ³)	
	1 Hour	250 ppbv (655 µg/m ³)		--	--	
PM ₁₀	Annual Geometric Mean	30 µg/m ³	Size Selective Inlet High Volume Sampler and Gravimetric Analysis	--	--	Inertial Separation and Gravimetric Analysis
	24 Hour	50 µg/m ³		150 µg/m ³	Same as Primary Standards	
	Annual Arithmetic Mean	--		50 µg/m ³		
PM _{2.5}	Annual Arithmetic Mean	--	--	15 µg/m ³ (3-year average)	--	
	24 Hour	--	--	65 µg/m ³ (3-year average of 98 th percentiles)		
SO ₄	24 Hour	25 µg/m ³	Turbidimetric Barium Sulfate	--	--	--
Pb	30 Day Average	1.5 µg/m ³	Atomic Absorption	--	--	Atomic Absorption
	Calendar Quarter	--		1.5 µg/m ³	Same as Primary Standards	
H ₂ S	1 Hour	30 ppbv (42 µg/m ³)	Cadmium Hydroxide	--	--	--
Vinyl Chloride (chloroethene)	24 Hour	10 ppbv (26 µg/m ³)	Tedlar Bag Collection, Gas Chromatography	--	--	--
Visibility Reducing Particles	8 Hour (10:00 a.m. to 6:00 p.m. PST)	Insufficient amount to produce an extinction coefficient of 0.23 per kilometer due to particles when the relative humidity is less than 70 percent. ⁽⁸⁾	CARB Method V.	--	--	--

WP2/Gold Fields/99-116 (11/5/99/mc)

(1) California standards for O₃, CO, SO₂ (1 hour), NO₂, PM₁₀, and visibility reducing particles are not to be equaled or exceeded.(2) National standards, other than O₃ (8-hour), PM_{2.5} (24-hour), and those based on annual averages or arithmetic means, are not to be exceeded more than once a year. The O₃ standard is attained when the expected number of days per calendar year with maximum hourly average concentrations above the standard is equal to or less than one.

(3) Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 mm mercury (1,013.2 millibar). Parts per million by volume = ppmv, and parts per billion by volume = ppbv.

(4) Equivalent procedure, which can be shown to satisfy CARB by providing equivalent results at or near the level of the air quality standard, may be used.

(5) National Primary Standards: The levels of air quality necessary, with an adequate margin of safety, to protect public health. Each state must attain the primary standards no later than three years after that state's implementation plan is approved by EPA.

(6) National Secondary Standards: The levels of air quality necessary to protect public welfare from any known or anticipated adverse effect of a pollutant. Each state must attain the secondary standards within a "reasonable time" after the state implementation plan is approved by EPA.

(7) Reference method as described by EPA. An "equivalent method" of measurement may be used, but must have a "consistent relationship to the reference method" and must be approved by EPA.

(8) This standard is intended to limit the frequency and severity of visibility impairment due to regional haze and is equivalent to 10-mile nominal visual range when relative humidity is less than 70 percent.

Source: TRC, 2000.

be developed by state and local air pollution control agencies to review new and modified stationary sources, and require offsets, if needed.

Ambient air quality standards consist of two parts: an allowable concentration of a pollutant, and an averaging time over which the concentration is measured. Allowable concentrations are based on the results of studies of the effects of the pollutants on human health, test animals, crops and vegetation, and, in some cases, damage to paint and other materials. The averaging times are based on whether the damage caused by the pollutant is more likely to occur during exposures to a high concentration for a short time (e.g., 1 hour), or to a low concentration over a longer period (e.g., 1 year). For some pollutants there is more than one air quality standard, reflecting both its short-term and long-term effects.

EPA's new NAAQS for ozone and fine particulate matter went into effect on September 16, 1997. For ozone, the previous 1-hour average standard of 0.12 parts per million by volume (ppmv) was replaced by an 8-hour average standard of 0.08 ppmv. Compliance with this standard is based on the 3-year average of the annual fourth-highest daily maximum 8-hour average concentration measured at each monitor within an area.

The NAAQS for particulates were revised in several respects. First, compliance with the current 24-hour PM_{10} standard will now be based on the 99th percentile of 24-hour concentrations at each monitor within an area. Two new $PM_{2.5}$ standards were added: a standard of 15 micrograms per cubic meter ($\mu g/m^3$), based on the 3-year average of annual arithmetic means from single or multiple monitors (as available); and a standard of 65 $\mu g/m^3$, based on the 3-year average of the 98th percentile of 24-hour average concentrations at each monitor within an area. EPA is delaying implementation of the new standards for an interim period to establish $PM_{2.5}$ monitoring networks, designate areas and develop control strategies. The EPA currently has very little data on which to establish the air quality status of areas with regard to $PM_{2.5}$. The previous PM_{10} status for an area will continue to apply until new data become available.

On May 14, 1999, a three-judge panel of the U.S. Court of Appeals for the District of Columbia set aside the new ozone and particulate matter (PM) standards that the EPA issued in 1997. The Court removed the revised federal standard for PM_{10} , put a hold on implementing the 8-hour ozone standard, and asked for further comments on the $PM_{2.5}$ standard.

California has taken the following position in this unresolved situation. The 8-hour ozone standard will remain in place. However the Court did prohibit EPA from enforcing this standard. In addition, the previously existing 1-hour ozone standard will continue to apply in areas that have not attained that standard (e.g., Imperial County). Although the court removed the new PM_{10} standard, the previously existing PM_{10} standard will continue to apply.

California's state standards continue to apply. Because most Californians live in areas that still exceed the federal 1-hour ozone standard and the state's 1-hour ozone standard, CARB will continue to implement existing programs and pursue new emission reduction measures to meet those standards. Title II of the CAAA contains highway and off-road provisions relating to mobile sources. Vehicles

are subject to increasingly stricter emission limitations on NO_x, nonmethane hydrocarbons, and CO. Diesel fuel for highway vehicles is required to have a sulfur content less than 0.05 percent.

Regulations (Title 40, CFR Part 51, Subpart W, Sections 51.853 through 51.860) require the Federal agency proposing an action having air emissions to make a determination of conformity with the State Implementation Plan (SIP). Conformity can be determined on the basis that net total emission changes (increases and decreases) will be less than specified thresholds (Section 51.853(b)) for each nonattainment and maintenance area criteria pollutant.

EPA has promulgated the following stationary source regulatory programs to implement the requirements of the CAA as related to mining:

- New Source Review (NSR)
- Prevention of Significant Deterioration (PSD)
- New Source Performance Standards (NSPS)
- National Emission Standards for Hazardous Air Pollutants (NESHAP)
- Title V: Operating Permits

New Source Review

- Authority: Clean Air Act §171-193, 42 USC §7501 et seq.; Code of Regulations (CFR), Title 40, Parts 51 and 52.
- Purpose: Requires preconstruction review and permitting of new or modified major stationary sources of air pollution to allow industrial growth without interfering with the attainment of ambient quality standards. NSR applies to pollutants for which ambient concentration levels exceed the corresponding NAAQS (i.e., nonattainment pollutants). New and modified stationary sources must be reviewed to assure that their permitting does not prevent or delay bringing federal nonattainment areas into attainment. This review requires that new emissions proposed for a nonattainment criteria pollutant or its precursors from a stationary source cannot be permitted without elimination of at least an equal amount of the same pollutant or its precursors through offsets. The offset required usually increases with the distance between the proposed and reduced sources. Offsets are intended to assure that no net increase occurs.
- Administering Agency: ICAPCD with EPA Region 9 oversight.

Prevention of Significant Deterioration (PSD) Program

- **Authority:** Clean Air Act §160-169A, 42 USC §7470-7491; 40 CFR Parts 51 and 52.
- **Purpose:** Requires preconstruction review and permitting of new or modified major stationary sources of air pollution to prevent significant deterioration of ambient air quality. PSD applies to pollutants for which ambient concentrations do not exceed the corresponding NAAQS (i.e., attainment pollutants). The PSD program allows new sources of air pollution to be constructed, or existing sources to be modified, while preserving the existing ambient air quality levels, protecting public health and welfare, and protecting Class I areas (e.g., national parks and wilderness areas).
- A PSD review for the Proposed Action by the U.S. EPA is not required if the emission rate of each attainment pollutant from a new major stationary source or a major modification to an existing major stationary source would be less than the threshold of 250 tons per year (40 CFR, Section 52.21). The Proposed Action does not qualify as either a new major stationary source or as a major modification. Hence, a PSD review is not needed. Class I areas will not need to be identified, and a PSD permit will not be required.
- **Administering Agency:** ICAPCD, with EPA Region 9 oversight.

New Source Performance Standards

The Mesquite mine is potentially subject to Standards of Performance for Metallic Mineral Processing Plants (Subpart LL of Part 60 in CFR Title 40), depending on the specific pieces of equipment and processes used in the existing operation. The inapplicability of this regulation is discussed under the local air district rules.

Another potentially applicable NSPS is that for the diesel fuel and gasoline storage tanks as follows:

Standards of Performance for Volatile Organic Liquid Storage Vessels

- **Authority:** Clean Air Act § 171-193, 42 U.S. C. 7401-7601, Code of Regulations (CFR), Title 40, part 60, Subpart Kb
- **Purpose:** Requires storage vessels containing volatile organic liquids, for which construction, reconstruction, or modifications commenced after July 24, 1984, to be equipped with emission controls to prevent the escape of volatile organic vapors or gases to the atmosphere. Emission controls include mechanical devices, seals, closed vent systems and closure devices that contain or collect VOC vapors and gases potentially discharged from the tank to the atmosphere. This regulation also requires specific testing, inspections, and measurements and operations monitoring be performed routinely on the tank and emissions controls. Recordkeeping and reporting requirements are also included in this subpart.
- **Administering Agency:** ICAPCD with EPA Region 9 oversight.

National Emission Standards for Hazardous Air Pollutants (NESHAP)

The USEPA has promulgated at least 22 NESHAPs for specific industries and emissions, which are contained in 40 CFR Part 61. None of these NESHAPs apply to the Mesquite Mine.

Title V - Operating Permits Program

- Authority: Clean Air Act §501 (Title V), 42 USC §7661; 40 CFR Part 70.
- Purpose: Requires the issuance of operating permits that identify all applicable federal performance, operating, monitoring, recordkeeping, and reporting requirements. Title V applies to major facilities, Phase II acid rain facilities, subject solid waste incinerator facilities, and any facility listed by EPA as requiring a Title V permit.
- Administering Agency: ICAPCD with EPA Region 9 oversight.

State

The California Air Resources Board (CARB) was created in 1968 by the Mulford-Carrell Air Resources Act. CARB's responsibilities are to develop, adopt, implement, and enforce the state's motor vehicle pollution control program; to administer and coordinate the state's air pollution research program; to adopt and update, as necessary, the state's ambient air quality standards; to review the operations of the local air pollution control districts; and to review and coordinate preparation of the SIP for achievement of the NAAQS.

State Implementation Plan

- Authority: Health & Safety Code (H&SC) §39500 et seq.
- Purpose: Required by the federal Clean Air Act, the SIP must demonstrate the means by which all areas of the state will attain NAAQS within the federally-mandated deadlines. CARB reviews and coordinates preparation of the SIP. Local districts must adopt new rules, or revise existing rules, and demonstrate that the resulting emission reductions, in conjunction with reductions in mobile source emissions, will result in the attainment of NAAQS. Relevant District Rules and Regulations that have also been incorporated into the SIP are discussed in Section 3.1.8.2.1.3.
- Administering Agency: ICAPCD, with CARB and EPA Region 9 oversight.

California Clean Air Act

- Authority: H&SC §40910 - 40930.
- Purpose: Established in 1989, the California Clean Air Act requires local districts to attain and maintain both national and state ambient air quality standards at the "earliest practicable date." Local districts must prepare air quality plans demonstrating the means by which the ambient air

quality standards will be attained. The Imperial County Air Quality Attainment Plan is discussed in Section 3.1.8.2.1.3.

- Administering Agency: ICAPCD, with CARB oversight.

Toxic Air Contaminant Program

- Authority: Assembly Bill (AB) 1809, H&SC §39650 - 39675.
- Purpose: Established in 1983, the Toxic Air Contaminant Identification and Control Act created a two-step process to identify toxic air contaminants and control their emissions. CARB identifies and prioritizes the pollutants to be considered for identification as toxic air contaminants. CARB assesses the potential for human exposure to a substance while the Office of Environmental Health Hazard Assessment (OEHHA) evaluates the corresponding health effects. Both agencies collaborate in the preparation of a risk assessment report that concludes whether a substance poses a significant health risk and should be identified a toxic air contaminant. In 1993, the Legislature amended the program to identify the 189 federal hazardous air pollutants as toxic air contaminants. CARB reviews the emission sources of an identified toxic air contaminant and develops, if necessary, air toxics control measures to reduce the emissions. No air toxics control measures adopted via the Toxic Air Contaminant Program are applicable to the Proposed Action.
- Administering Agency: ICAPCD, with CARB oversight.

Air Toxic "Hot Spots" Act

- Authority: AB 2588, CA Health & Safety Code §44300-44384; 17 CCR §93300-93347.
- Purpose: Established in 1987, the Air Toxics "Hot Spots" Information and Assessment Act supplements the toxic air contaminant program by requiring the development of a statewide inventory of air toxic emissions from stationary sources. The program requires affected facilities to prepare (1) an emissions inventory plan that describes how relevant air toxics and sources of air toxics emissions will be identified and emission rates will be quantified; (2) an emissions inventory report quantifying air toxics emissions; and (3) a health risk assessment, if necessary, to characterize the health risks to the exposed public. Facilities whose air toxics emissions are deemed to pose a significant health risk must issue notices to the exposed population. In 1992, the Legislature amended the program to further require facilities whose air toxics emissions are deemed to pose a significant health risk to implement management plans to reduce the associated risks. This program is implemented at the local level with state oversight.
- Administering Agency: ICAPCD, with CARB oversight.

The California Clean Air Act established ambient air quality standards (CAAQS) as summarized in Table 3.8-3. The state standards are stricter than the NAAQS, and also cover sulfate, hydrogen sulfide (H₂S), vinyl chloride, and visibility.

CARB is responsible for enforcing state air pollution regulations, but delegates the actual rule-making, permitting and enforcement activities for stationary sources to 35 local districts. The California Clean Air Act recognized that transported emissions and atmospheric chemical reactions affect, and may even dominate, the air quality in downwind air basins. CARB (1989) identified SOCAB and the San Joaquin Valley Unified Air Basin as areas of origin for the transport of ozone and its precursors into Coachella Valley and Imperial County (combined into Salton Sea Air Basin), and listed San Diego County and Mexicali as potential source areas for transport impacts. Additional responsibilities of CARB that are applicable to the analysis performed for the Proposed Action include:

- Requiring local districts to develop plans to attain CAAQS.
- Establishing state emission standards for on-highway, gasoline-powered mobile sources, and the sulfur content of diesel fuel.

Local (Imperial County Air Pollution Control District)

When the state's air pollution statutes were reorganized in the mid-1960s, local districts were required to be established in each county of the state. There are three different types of districts: county, regional and unified. Local districts have principal responsibility for the following:

- Develop plans to meet the CAAQS and NAAQS.
- Develop non-vehicular source control measures needed to achieve and maintain these standards.
- Implement permit programs established for the construction, modification, and operation of stationary sources of air pollution.
- Enforce air pollution statutes and regulations governing nonvehicular sources.
- Develop employer-based trip reduction programs.

Imperial County has experienced exceedances of both the federal ozone NAAQS (0.12 ppmv for 1 hour), and the stricter ozone CAAQS (0.09 ppmv for 1 hour) and hence, is nonattainment of both standards as shown in Table 3.8-4. The county is also nonattainment of both national and state standards for PM₁₀.

PM₁₀ is emitted directly by sources and is created indirectly in the atmosphere from chemical reactions that convert NO_x, ROC and SO_x gaseous precursors into small particles. Sources of PM₁₀ are both natural, and related to human activities (anthropogenic). Anthropogenic sources include pointsources (smoke stacks), stationary area sources (empty agricultural land), mobile source exhaust,

Table 3.8-4

Attainment Status Of Imperial County Mesquite Mine Expansion

Criteria Pollutant	Attainment Classifications		Precursor Emission
	CAAQS	NAAQS	
O ₃	Nonattainment, Moderate	Transitional	NO _x , ROC
NO ₂	Attainment	Unclassified	NO _x
PM ₁₀	Nonattainment	Moderate	NO _x , ROC, SO _x
SO ₂	Attainment	Attainment	SO _x
Sulfate	Attainment	NA	SO _x
CO	Unclassified	Unclassified	NA
Lead (particulate)	Attainment	--	--
Hydrogen Sulfide (H ₂ S)	Unclassified	--	--
Visibility-Reducing Particles	Unclassified	--	NO _x , ROC, SO _x

Source: TRC, 2000.

and fugitives (e.g., dust from the wheels of a truck). NO₂ and SO₂ must be evaluated as both attainment and nonattainment pollutants because they are criteria pollutants and precursors.

Part of the ozone in Imperial County is transported from other areas, causing some of the exceedances of the state standard. A portion of the ozone in Imperial County is transported from SOCAB, according to CARB (1989, 1993b and 1996). Back-trajectories track SOCAB emissions all the way to Imperial County. CARB (1993a) states that Mexico is also a source of the ozone and precursors transported into Imperial County, which are monitored at Calexico-Grant and El Centro. Such transport means that control of ozone in Imperial County needs to be coordinated with the control of ozone in the SOCAB and Mexico, especially Mexicali (just across the international border from Calexico). Such coordinated control will most likely delay attainment of the CAAQS for ozone in Imperial County to beyond 2010, when SCAQMD proposes to reduce emissions in SOCAB enough to attain the federal ozone standard. Even then, the ozone CAAQS may not be attained in Imperial County if Mexicali sources of ozone precursors are not sufficiently controlled by that time.

The existing air quality control permit (Authority to Construct/Permit to Operate) from the ICAPCD would be amended to incorporate changes associated with the Proposed Action.

Imperial County Air Quality Attainment Plan (Plan)

- Authority: H&SC §40000 et seq.
- Purpose: The Plan defines the proposed strategies, including stationary source control measures and NSR rules, whose implementation will attain the CAAQS. The Plan was designed to reduce emissions of nonattainment pollutants in Imperial County by the required 5 percent per year. The relevant stationary source control measures and NSR requirements are discussed below.
- Administering Agency: ICAPCD, with CARB oversight.

Imperial County Air Pollution Control District Rules and Regulations

- Authority: H&SC §40000 – 40104.
- Purpose: Establish procedures, exemptions, standards for issuing permits, requirements (control, monitoring, recordkeeping and reporting), and emission limitations on a source-specific basis.
- Administering Agency: ICAPCD with CARB and EPA Region 9 oversight.

3.8.2.3 Summary of Applicable Requirements

This section summarizes applicable federal, state, and local air pollution requirements.

New and Modified Stationary Source Review (Rule 207)

Rule 207 combines into a single rule the more stringent requirements of the federal PSD and NSR programs, as well as the NSR requirements of the California Clean Air Act. The rule contains the following requirements:

- BACT
- Offsets
- Air Quality Impact Analysis

Best Available Control Technology

BACT for each specific pollutant must be applied to a new or modified stationary emissions unit that has the potential to emit at or above the threshold rates shown in Table 3.8-5.

The District defines BACT as follows:

- Most effective emission control device emission limit, or technique which has been required and used for such class or category of source unless the applicant demonstrates to the satisfaction of the Air Pollution Control Officer that such limitations required on other emissions units have not been demonstrated to be achievable.
- Any other alternative emission control device, emission control technique, basic equipment determined to be technologically feasible and cost-effective by the Air Pollution Control Officer.
- Under no circumstances shall BACT be determined to be less stringent than the emission control required by any applicable provision of laws or regulations of the District, State and federal government, or State Implementation Plan, unless the applicant demonstrates to the satisfaction of the Air Pollution Control Officer that such limitations are not technologically achievable.
- In no event shall the application of BACT result in the emission of any pollutant at a rate that exceeds an applicable New Source Performance Standard (40 CFR, Part 60) or National Emission Standard for Hazardous Air Pollutants (40 CFR, Part 61).

BACT determinations are made by the District on a case-by-case basis.

Emission Offsets

For a new or modified facility, any emission increase greater than 137 lbs/day must be offset.

- Offsets for increases in carbon monoxide emissions in attainment areas shall not be required if the applicant, using air quality dispersion modeling analysis, demonstrates to the satisfaction of the Air Pollution Control Officer that carbon monoxide ambient air quality standards would not be violated in the areas to be affected.

Table 3.8-5
ICAPCD BACT Emission Rate Thresholds

Pollutant	Threshold (Lb./day)
NO _x	25
SO _x	25
ROC	25
CO	550
H ₂ S	55
Total Reduced Sulfur Compounds	55
PM ₁₀	25
Lead	3.3
Asbestos	0.4
Beryllium	0.0022
Mercury	0.55
Vinyl Chloride	5.5
Fluoride	16
Sulfuric Acid Mist	38

Source: TRC, 2000.

Emissions must be offset at the following ratios:

- 1:1 within the same source.
- 1.2:1 within 50 miles of the source.
- To be determined within the range of 1.2:1 and 3:1 by the Air Pollution Control Officer for offset sources more than 50 miles from the proposed source and within the same air basin.

Air Quality Impact Analysis

Dispersion of air emissions must be analyzed with an EPA-approved model to demonstrate that AAQS will not be exceeded, nor will an existing exceedance be made worse.

Noncriteria Pollutant New Source Review

District Rule 216 requires major sources of noncriteria pollutants (also called toxic air contaminants or hazardous air pollutants [HAP]) to install toxics-BACT (T-BACT). Major source is defined in federal regulation 40 CFR Section 6341 as a new process or production unit, fabricated, erected or installed at a developed site, which in and of itself emits or has the potential to emit 10 tons per year (tpy) of any HAP or 25 tpy of any combination of HAPs.

The District requests that health risk be assessed according to generally accepted guidance (e.g., CAPCOA, 1993). Guideline limits include a carcinogenic risk from Proposed Action emissions of 10-in-one-million, and health hazard indices (chronic and acute)⁽¹⁾⁽²⁾ of 1.0.

Federal Operating Permit (Title V)

District Rule 900 (Procedures for Issuing Permits to Operate for Sources Subject to Title V of the Federal Clean Air Act Amendments of 1990) requires major facilities and facilities subject to Clean Air Act Title IV (i.e., Acid Rain facilities) to obtain an operating permit containing federally enforceable requirements. An application, if required, must describe all processes, applicable regulations, estimated direct and fugitive emissions, required methods for determining compliance, associated operating conditions, air pollution control equipment, and a facility compliance plan.

A detailed emission inventory contained in TRC (1996), and the similarly detailed emission inventory contained in the air quality impact analysis herein, indicate that the Mesquite Mine Expansion does not require a Title V permit.

-
- Chronic health hazard index is the sum of the health hazard index for each chronic non-criteria pollutant listed in CAPCOA (1993). The chronic health hazard index for a specific noncriteria pollutant equals the maximum annual concentration of the pollutant at or beyond the property line divided by the reference exposure level (REL) in CAPCOA (1993).
 - Acute health hazard index is the sum of the health hazard index for each acute noncriteria pollutant listed in CAPCOA (1993). The acute health hazard index for a specific acute noncriteria pollutant equals the maximum 1-hour concentration of the pollutant at or beyond the property line divided by the acute REL in CAPCOA (1993).

New Source Performance Standards (NSPS)

No NSPS are applicable to the mining and processing of gold-bearing ore. District Rule 1101 incorporates the federal NSPS and regulations from 40 CFR Part 60. As mentioned above in the discussion of federal regulations and standards, Subpart LL of 40 CFR Part 60 contained Standards of Performance for Metallic Mineral Processing Plants. The Mesquite Mine has a metallic mineral (gold) processing plant, but not the following “...affected facilities...” listed in Section 60.380 of Subpart LL:

- Crusher and screen in open-pit mines
- Mill or concentrator facilities (i.e.):
 - crusher, screen, bucket elevator, conveyor belt transfer point,
 - thermal dryer, product packaging station, storage bin,
 - enclosed storage area, truck loading station, truck unloading station, rail car loading station, rail car unloading station,

Therefore, the NSPS is not applicable to the existing Mesquite Mine or Proposed Action.

Applicability of 40 CFR Part 60, Subpart Kb

40 CFR 60, Subpart Kb is applicable to facilities with any volatile organic liquid-containing vessel with a capacity greater than or equal to 40 cubic meters (10,568 gallons) for which construction, reconstruction, or modifications commenced after July 24, 1984.

Construction, reconstruction or modifications of the storage tanks at Mesquite Mine occurred before July 24, 1984. Based upon this requirement alone, this Subpart is not applicable. Further, the tanks at the Mesquite Mine are exempt from the requirements of this Subpart, based upon subparagraphs 60.110b (b) and (c), as summarized below, respectively:

- 40 CFR 60, Subpart Kb Section 60.110b (b) storage vessel with a design capacity less than 75 cubic meters (19,815 gallons)
- 40 CFR 60, Subpart Kb Section 60.110b (c) storage vessel with design capacity greater than or equal to 151 cubic meters containing a liquid with a maximum true vapor pressure less than 3.5 kilo Pascals (kPa.)
- 40 CFR 60, Subpart Kb Section 60.110b (c) storage vessel with design capacity greater than or equal to 75 m³ (19,815 gallons), but less than 151 cubic meters (39,895 gallons) containing a liquid with a maximum true vapor pressure less than 3.5 kPa.

National Emission Standards for Hazardous Air Pollutants (NESHAPs)

No NESHAPs are applicable to the mining and processing of gold-bearing ore.

ICAPCD Prohibitory Rules

The District prohibitory rules applicable to the Proposed Action include:

- Rule 400 - Fuel Burning Equipment: Prohibits emission of sulfur compounds (calculated as SO₂), NO_x (as NO₂), and combustion contaminants (defined in Rule 100) in excess of 200, 140, and 10 pounds per hour, respectively.
- Rule 401 - Opacity of Emissions: Prohibits air contaminant emissions as dark or darker than Ringelmann Chart No. 1 for periods greater than three minutes in any hour.
- Rule 403 - General Limitations on the Discharge of Air Contaminants: Prohibits emissions of air contaminants, combustion contaminants, and particulate matter from any single emissions unit in excess of specified rates based on process rate by weight, volume, rate of discharge, or concentration in discharge gas.
- Rule 404 - Particulate Matter Emissions-Process Weight: Prohibits particulate emissions in excess of tabulated rates in pounds per hour for specified process rates in pounds per hour.
- Rule 405 - Sulfur Compounds: Prohibits sulfur compound emissions, calculated as SO₂, in excess of 0.2 percent by volume (2,000 ppmv) from a single source.
- Rule 406 - Specific Contaminants: Prohibits discharge from a single source of combustion particulate concentration in excess of 0.2 grains per standard cubic foot of gas, calculated at 12 percent carbon dioxide.
- Rule 407 - Nuisances: Prohibits the discharge from a facility of air contaminants that cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health or safety of any such persons or the public or which cause or have a natural tendency to cause injury or damage to business or property.

Authority to Construct

Rule 201 (Permits Required) specifies that a person "constructing, erecting, installing, modifying, or replacing any article, machine, equipment or contrivance, the use of which may emit or control air contaminants, shall first obtain written authorization for such construction from the Control Officer, except as may be exempted herein."

Conformity

ICAPCD Rule 925 contains virtually identical language as the Federal conformity regulations in Title 40, CFR Part 51, Subpart W, Sections 51.853 through 51.860. Similarly, Rule 925 requires the Federal agency proposing an action having air emissions to make a determination of conformity with the SIP. Conformity can be determined on the basis that net total emission changes (increases and decreases) will be less than specified thresholds (Section D.2 of Rule 925) for each nonattainment and maintenance area criteria pollutant.

3.8.3 Existing Climate and Meteorology

The desert environment is very hot in summer and mild in winter. Humidity is generally low, except in July and August when the monsoon wind blows from the Gulf of California (i.e., from the southeast). Precipitation is low (about 3 inches per year); it occurs mostly during the winter rainy season, while the remainder occurs during the summer monsoon season.

Regional wind direction follows two patterns. From October through May, prevailing winds are from the west and northwest. The humidity is lowest under these conditions. Some of these winds originate in SOCAB, enter the Coachella Valley through the Banning Pass, and travel southeasterly along the Salton Sea Trough.

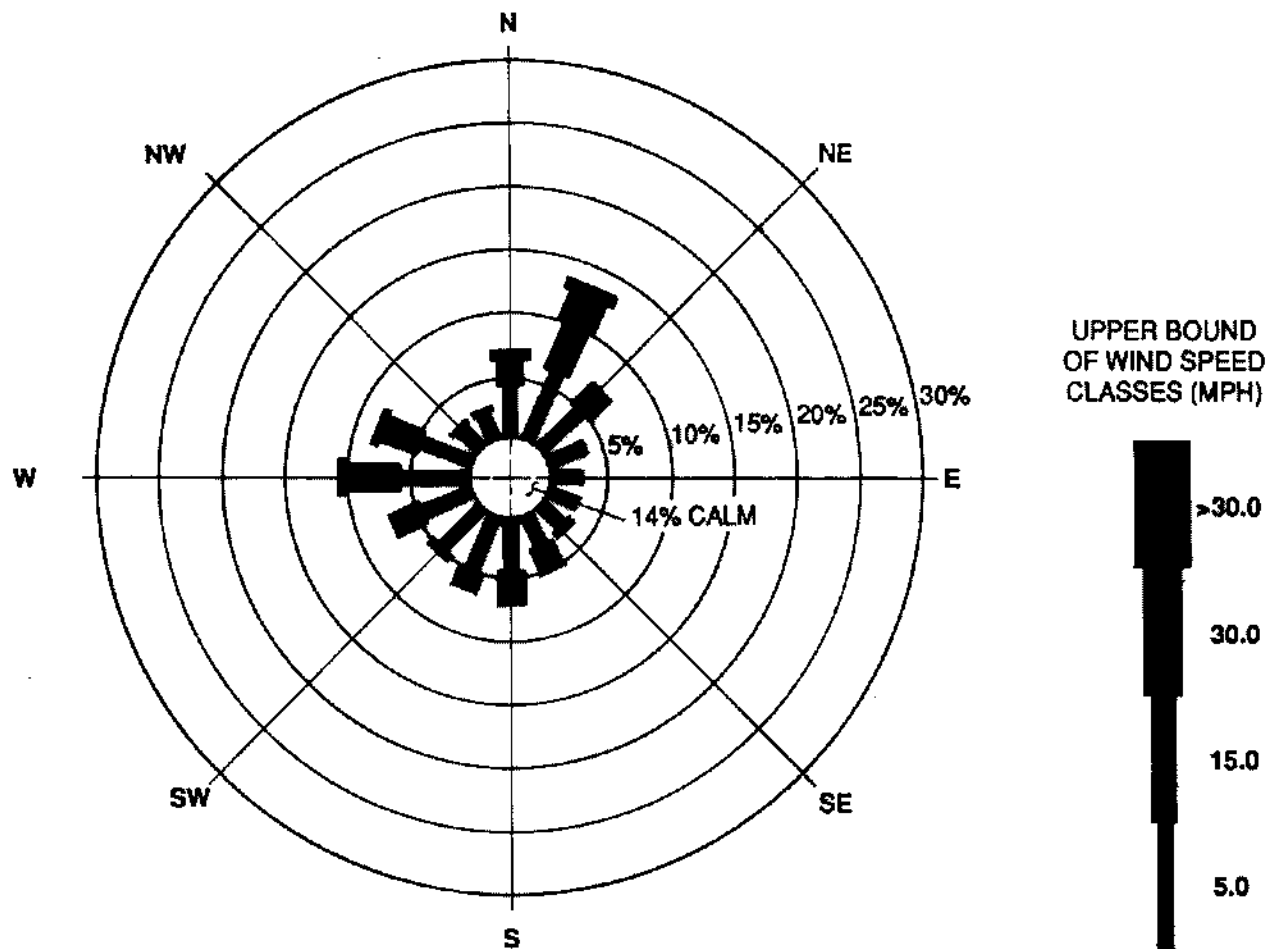
July and August weather patterns are often dominated by a heating-induced low-pressure area that forms over the hot interior deserts, drawing air from the Gulf of California (southeast of the site) and northern portion of Mexico. The humidity is highest during these conditions. June and September are transition months between the two seasonal patterns.

Wind speeds in the region are sufficiently strong to promote good mixing so that air mass stagnation does not occur. Daytime winds average 9 to 13 mph, are strongest in winter and early spring, and are weakest in fall. Winds at night average 5 to 8 mph, are weakest in late spring, and are strongest in winter.

Vertical mixing and dilution in the area is very good, with afternoon mixing heights reaching at least 10,000 feet above ground in summer. Strong daytime mixing generally disperses nighttime ground-based thermal inversions.

Analysis of wind data from El Centro, Imperial Airport, and Blythe, all in California, and Yuma, Arizona indicate that weather conditions at the mine are generally similar to those in the region. In addition, wind conditions are locally affected by the nearby Chocolate Mountains. Wind data from the existing Mesquite Mine are shown in Figure 3.8-1, and indicate that the wind frequently blows from the north-northeast, west and south. This distribution is based on 1 year of data, extending from April 1, 1991 through March 31, 1992, and measured at the site shown in Figure 3.8-2. Additional wind data, monitored during 1989, were used to verify that the distribution in Figure 3.8-1 is representative for the site.

The regional westerlies are the "normal" flow over the entire region, especially during afternoons when the wind is well developed by daily heating. The southerly flow is associated with the summer monsoon. The north-northeasterly winds are caused by Santa Ana winds coming down from the north, where a high-pressure area typically develops over the deserts in winter. Local topographic conditions steer these winds south along the eastern side of the Chocolate Mountains and through a pass between the southern end of this range and the western side of Quartz Peak.



AVERAGING TIME: 1 HOUR
 MESQUITE, CALIFORNIA
 WIND ROSE ANALYSIS
 FOR 4/1/91 TO 3/31/92
 (PERIOD FOR AIR DISPERSION MODELING)

SOURCE: TRC, 2000

North
 3/14/00

Mesquite Mine Expansion EIR/EIS

Annual Wind Rose

**FIGURE
 3.8-1**

3.8.4 Existing Air Quality

Monitoring data for criteria pollutants are reviewed, along with resulting attainment designations, to describe existing (background) air quality. Imperial County data from 1996 through 1998 form the basis of this review for ozone, PM₁₀, NO₂, SO₂, and CO, while site data for 1997 through 1999 were available for PM₁₀.

The Mesquite Mine has been operating since 1985. Hence, emissions from existing mobile equipment exhaust, fugitive dust and stationary sources are already accounted for in the monitored ambient concentrations (i.e., background).

3.8.4.1 Ozone

Ozone is generated by a complex series of chemical reactions between VOC and NO_x in the presence of ultraviolet radiation. VOC and NO_x emissions from vehicles and stationary sources, in combination with daytime wind flow patterns, mountain barriers, a persistent temperature inversion, intense sunlight, and high ambient temperature cause high ozone concentrations.

Ozone is monitored at the following six locations in Imperial County:

- Calexico – East
- Calexico - Ethel Street
- Calexico - Grant Street
- El Centro - 9th Street
- Niland - English Road
- Westmoreland - West 1st Street

Maximum ozone concentrations measured at these locations during each of the three previous years are shown in Table 3.8-6, along with the annual number of days that exceed AAQS. These exceedances result in the state and federal nonattainment status shown in Table 3.8-4.

During one year from May 21, 1992 through May 31, 1993, ozone was continuously monitored at the Mesquite Mine well field located south of the mine. Ozone concentration exceeded the 90 ppbv 1-hour CAAQS twice, reaching 100 ppbv at 4:00 p.m. on April 28, 1993 and 94 ppbv at 9:00 a.m. on August 15, 1993 (Table 3.8-7). The ozone concentration equaled the 90 ppbv CAAQS at 9:00 a.m. on July 17, 1992. Each time, the wind was blowing from the southwest.

3.8.4.2 Nitrogen Dioxide

Nitrogen oxides are primarily generated from the combustion of fuels. Nitrogen oxides include nitric oxide (NO) and NO₂. Because NO converts to NO₂ in the atmosphere and NO₂ is more toxic, NO₂ is the criteria pollutant. Control of NO₂ is also important because of its role in the formation of ozone.

Table 3.8-6

Ozone Concentrations in Imperial County 1996-1998

Parameter	Location	1996	1997	1998
Maximum 1-Hour Concentration (parts per million by volume, ppmv)	Calexico- East	0.162	0.121	0.123
	Calexico- Ethel Street	0.146	0.156	0.139
	Calexico- Grant Street	0.180	0.160	0.070
	El Centro- 9 th Street	0.140	0.130	0.110
	Niland- English Road	--	0.100	0.110
	Westmorland- W 1 st Street	--	--	0.120
Maximum 8-Hour Concentration (parts per million by volume, ppmv)	Calexico- East	0.117	0.092	0.101
	Calexico- Ethel Street	0.109	0.101	0.104
	Calexico- Grant Street	0.103	0.120	0.051
	El Centro- 9 th Street	0.113	0.111	0.087
	Niland- English Road	--	0.070	0.100
	Westmorland- W 1 st Street	--	--	0.096
Number of Days Exceeding 1-Hour CAAQS (0.09 ppmv)	Calexico- East	22	6	19
	Calexico- Ethel Street	44	24	23
	Calexico- Grant Street	19	55	0
	El Centro- 9 th Street	41	29	10
	Niland- English Road	--	1	5
	Westmorland- W 1 st Street	--	--	10
Number of Days Exceeding 1-Hour NAAQS (0.12 ppmv)	Calexico- East	3	0	0
	Calexico- Ethel Street	5	4	3
	Calexico- Grant Street	2	8	0
	El Centro- 9 th Street	6	2	0
	Niland- English Road	--	0	0
	Westmorland- W 1 st Street	--	--	0
Number of Days Exceeding 8-Hour NAAQS (0.08 ppmv)	Calexico- East	12	2	11
	Calexico- Ethel Street	13	8	7
	Calexico- Grant Street	10	46	0
	El Centro- 9 th Street	28	11	1
	Niland- English Road	--	0	4
	Westmorland- W 1 st Street	--	--	8
Ozone 1-Hour Exceedance "Month"	Calexico- East	June	September	December
	Calexico- Ethel Street	May	September	June
	Calexico- Grant Street	June	July	January
	El Centro- 9 th Street	June	June	March
	Niland- English Road	--	October	July
	Westmorland- W 1 st Street	--	--	June
Ozone 8-Hour Exceedance "Month"	Calexico- East	June	April	June
	Calexico- Ethel Street	June	June	June
	Calexico- Grant Street	May	July	January
	El Centro- 9 th Street	June	May	June
	Niland- English Road	--	October	July
	Westmorland- W 1 st Street	--	--	June

Source: TRC, 2000

Table 3.8-7
Ozone Monitoring⁽¹⁾
Mesquite Mine

Month/Year	Concentration (ppbv)	
	Monthly Arithmetic Mean	Maximum 1-Hour
May-92	36	61
Jun-92	43	84
Jul-92	31	90
Aug-92	35	94
Sep-92	35	78
Oct-92	34	76
Nov-92	34	70
Dec-92	29	41
Jan-93	28	47
Feb-93	33	59
Mar-93	39	78
Apr-93	53	100
May-93	49	88
Annual	37	100
CAAQS (1-hour)	90	90

Note: (1) Reference: Table 2.4, Technical Appendix F, BLM and County of Imperial(1994).

Source: TRC, 2000.

Table 3.8-8 shows the maximum 1-hour NO₂ concentrations measured during 1996-1998 at the two monitoring stations in Imperial County, Calexico-East and Calexico-Ethel Street, and the annual arithmetic mean ambient NO₂ level for each of those years. During this period the 1-hour concentrations on one day exceeded the state 1-hour standard (0.25 ppmv). The federal annual average standard (0.053 ppmv) was not exceeded.

NO₂ was measured, along with NO, at the well field as part of the site monitoring program in 1992-1993. The annual arithmetic mean and maximum concentrations were 3 and 39 ppbv, as shown in Table 3.8-9, far below the 53 ppbv annual NAAQS and 0.25 ppmv (250 ppbv) 1-hour CAAQS, respectively.

3.8.4.3 PM₁₀

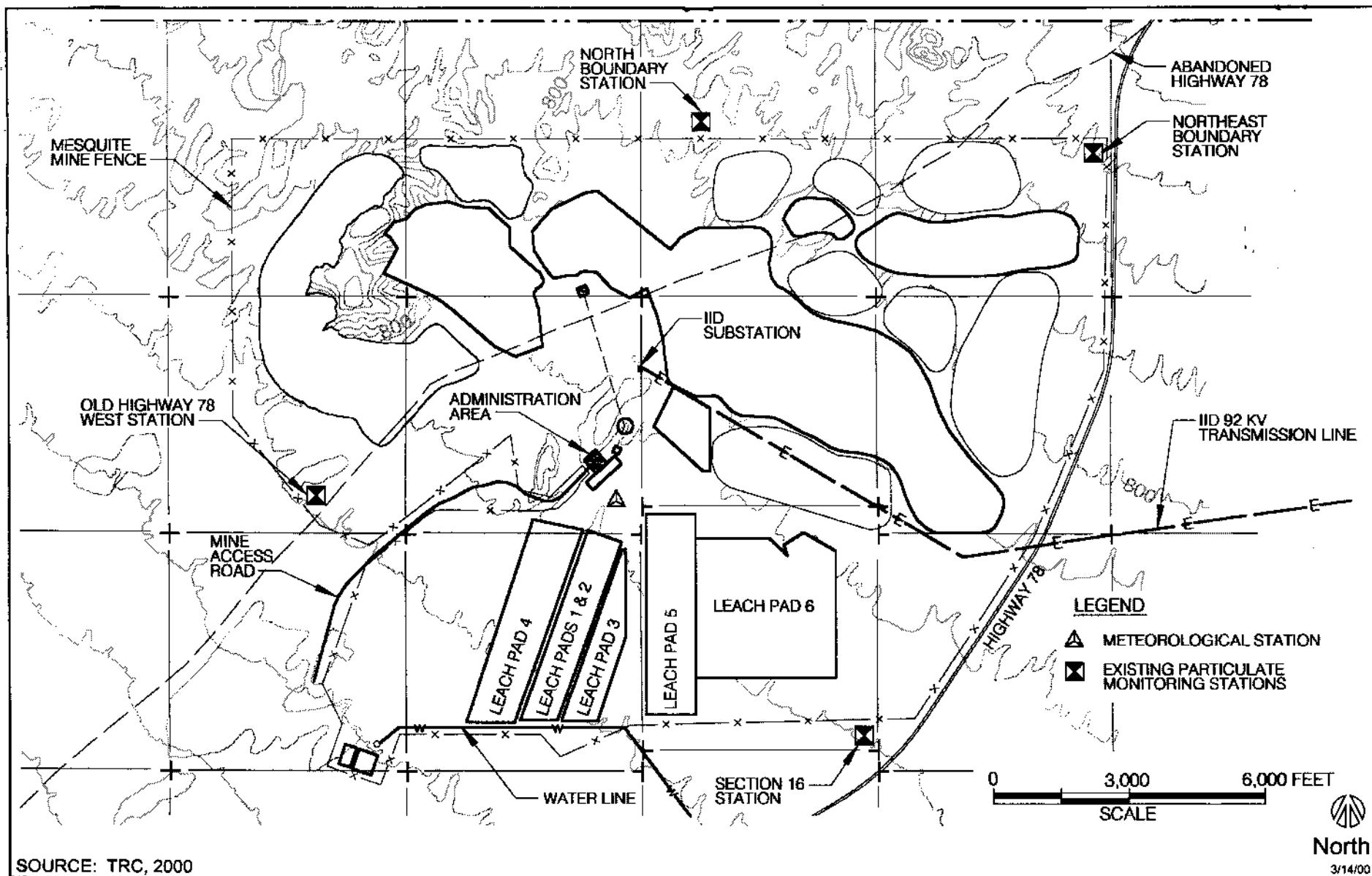
PM₁₀ is generated by a combination of wind-blown fugitive dust, particles emitted from combustion sources (usually carbon particles), and organic, sulfate, and nitrate aerosols formed in the air from emitted hydrocarbons, sulfur oxides, and nitrogen oxides, respectively. In 1984 CARB adopted standards for PM₁₀ and phased out the total suspended particulate (TSP) standards that had been in effect until then. PM₁₀ standards were substituted for TSP standards because PM₁₀ corresponds to the size range of inhalable particles related to human health. In 1987, EPA also replaced national TSP standards with PM₁₀ standards.

As discussed in Section 3.8.2, the NAAQS for PM₁₀ were further revised by EPA with new standards that went into effect on September 16, 1997. The new PM_{2.5} standards, promulgated at the same time, will not require specific actions by facilities because recent court action requested EPA to review the standards further before acting on them.

Table 3.8-10 shows the maximum 24-hour average PM₁₀ concentrations, and annual geometric and arithmetic means recorded at seven monitoring stations in Imperial County from 1996 through 1998. The number of days exceeding the state and federal standards separately is also shown. These exceedances account for the nonattainment designations shown in Table 3.8-4.

PM₁₀ is monitored at four sites around the mine as shown in Figure 3.8-2. The data for 1997-1999 is presented in Table 3.8-11. Although these measurements are not used to determine the attainment status of Imperial County, the number of days AAQS were exceeded at any of these four stations was less than the number of exceedances at any of the seven monitoring stations used by Imperial County (see Table 3.8-10). An improving trend is apparent in both tables. Only the North Boundary monitor had a single exceedance of the 24-hour CAAQS in 1998 and 1999.

Sources of PM₁₀ that can influence the concentrations measured at the mine include site activities (e.g., loading, hauling), nearby gravel mining activities (e.g., excavation, loading, hauling), recreational uses at the Algodones Dunes and other desert areas, and dust generation throughout the region when winds are strong. When all four of the monitors show high PM₁₀ concentrations, the wind speed was relatively high. Under these conditions, the measured dust concentrations are most likely high throughout the region, not just at the mine.



Mesquite Mine Expansion EIR/EIS

Air Quality Monitoring Station Locations

FIGURE
3.8-2

Table 3.8-8
Nitrogen Dioxide In Imperial County
1996-1998

Location	Parameters	1996	1997	1998
Calexico- East	Maximum 1-Hour Concentration (ppmv)	0.072	0.091	0.105
	Annual Arithmetic Mean (ppmv)	--	0.010	0.011
	Number of Days Exceeding 1-Hour CAAQS (0.25 ppmv)	0	0	0
Calexico- Ethel Street	Maximum 1-Hour Concentration (ppmv)	0.164	0.128	0.257
	Annual Arithmetic Mean	0.014	0.015	--
	Number of Days Exceeding 1-Hour CAAQS (0.25 ppmv)	0	0	1

Note: "--" = Not available
ppmv = parts per million by volume

Source: California Air Quality Data, California Air Resources Board.

Table 3.8-9
Nitrogen Dioxide Concentration
Mesquite Mine

Month	Year	Concentration (ppbv)	
		Arithmetic Mean	Maximum 1-Hour
May	1992	2	8
June	1992	3	23
July	1992	2	33
August	1992	2	33
September	1992	3	34
October	1992	3	39
November	1992	3	32
December	1992	4	31
January	1993	2	36
February	1993	4	27
March	1993	4	27
April	1993	5	35
May	1993	5	19
Annual	--	3	39
AAQS	--	53 (NAAQS)	250 (CAAQS)

Source: Table 2.4, Technical Appendix F, BLM (1994)

ppbv = parts per billion by volume

Table 3.8-10
PM₁₀ Concentrations in Imperial County
1996 - 1998
(micrograms per cubic meter, µg/m³)

Year	Parameter	Brawley/ Main Street	Calexico/ East	Calexico/ Ethel Street	Calexico / Grant Street	El Centro/ 9th Street	Niland/ English Road	Westmorland / W 1st Street
1996	Maximum 24-Hour Average	257	441	193	187	359	71	229
	Annual Geometric Mean (CAAQS = 30 µg/m ³)	41	90	62	63	39	41	42
	Annual Arithmetic Mean (NAAQS = 50 µg/m ³)	47	109	73	70	48	43	49
Number of Days Exceeding:								
	24-Hour CAAQS (50 µg/m ³)	22	35	41	34	18	6	20
	24-Hour NAAQS (150 µg/m ³)	1	8	5	3	1	0	2
1997	Maximum 24-Hour Average	532	199	166	179	120	191	213
	Annual Geometric Mean (CAAQS = 30 µg/m ³)	42	76	70	62	34	42	36
	Annual Arithmetic Mean (NAAQS = 50 µg/m ³)	50	86	77	75	38	46	43

Table 3.8-10
PM₁₀ Concentrations in Imperial County
1996 - 1998
(micrograms per cubic meter, µg/m³)

Year	Parameter	Brawley/ Main Street	Calexico/ East	Calexico/ Ethel Street	Calexico / Grant Street	El Centro/ 9th Street	Niland/ English Road	Westmorland / W 1st Street
Number of Days Exceeding:								
1997 (cont'd.)	24-Hour CAAQS (50 µg/m ³)	14	49	49	35	9	12	12
	24-Hour NAAQS (150 µg/m ³)	1	6	2	4	0	1	1
1998	Maximum 24-Hour Average	81	568	160	176	90	75	81
	Annual Geometric Mean (CAAQS = 30 µg/m ³)	35	79	58	51	29	26	28
	Annual Arithmetic Mean (NAAQS = 50 µg/m ³)	38	107	66	63	33	30	32
Number of Days Exceeding:								
	24-Hour CAAQS (50 µg/m ³)	9	44	39	29	9	4	9
	24-Hour NAAQS (150 µg/m ³)	0	10	1	2	0	0	0

Source: California Air Quality Data, California Air Resources Board

Table 3.8-11

PM₁₀, Mesquite Mine⁽¹⁾, 1997 - 1999

Year	Parameter	Highway 78	NE Boundary	N Boundary	Section 16	Overall ⁽²⁾
1997	Maximum 24-Hour Average ⁽³⁾	59.9	139.4	161.1	126.2	161.1
	Annual Geometric Mean (CAAQS = 30 µg/m ³)	18.8	14.5	18.8	17.8	17.3
	Annual Arithmetic Mean (NAAQS = 50 µg/m ³)	22.0	21.7	29.1	23.2	24.0
Number of Days Exceeding:						
	24-Hour CAAQS (50 µg/m ³)	1	2	8	2	8
	24-Hour NAAQS (150 µg/m ³)	0	0	1	0	1
1998	Maximum 24-Hour Average	41.0	40.2	50.4	37.7	50.4
	Annual Geometric Mean (CAAQS = 30 µg/m ³)	13.4	11.6	12.9	12.3	12.6
	Annual Arithmetic Mean (NAAQS = 50 µg/m ³)	16.7	14.7	16.7	15.6	15.9
Number of Days Exceeding:						
	24-Hour CAAQS (50 µg/m ³)	0	1	1	0	1
	24-Hour NAAQS (150 µg/m ³)	0	0	0	0	0
1999	Maximum 24-Hour Average	49.4	42.0	62.2	45.5	62.2
	Annual Geometric Mean (CAAQS = 30 µg/m ³)	14.7	12.8	14.0	14.5	14.7
	Annual Arithmetic Mean (NAAQS = 50 µg/m ³)	17.5	15.8	17.1	16.8	17.5

Table 3.8-11

PM₁₀, Mesquite Mine⁽¹⁾, 1997 - 1999

Year	Parameter	Highway 78	NE Boundary	N Boundary	Section 16	Overall ⁽²⁾
Number of Days Exceeding:						
1999 (cont'd.)	24-Hour CAAQS (50 µg/m ³)	0	0	1	0	1
	24-Hour NAAQS (150 µg/m ³)	0	0	0	0	0
1997 - 1999	3-year Geometric Mean	15.4	12.9	14.9	14.7	14.4
	3-year Arithmetic Mean	18.6	17.4	20.7	18.5	18.8

Notes:

(1) PM₁₀ data from four 24-hour ambient air samplers located at the Mesquite Mine.

(2) The overall maximum 24-hour average equals the highest of the four monitors.

The overall annual means are averaged over all four monitors.

Source: TRC, 2000.

The overall geometric and arithmetic means for the four monitors and the 3 years are 14.4 and 18.8 $\mu\text{g}/\text{m}^3$, respectively. These concentrations are only 48 and 38 percent of the annual PM_{10} CAAQS and NAAQS, respectively.

3.8.4.4 Sulfur Dioxide

Sulfur dioxide (SO_2) is produced when any sulfur-containing fuel such as diesel is burned. It is also emitted by chemical plants that treat or refine sulfur or sulfur-containing chemicals. Because of the complexity of the chemical reactions that convert SO_2 to other compounds (such as PM_{10} sulfate), peak concentrations of SO_2 occur at different times of the year in different parts of California, depending on local fuel characteristics, weather, and topography.

SO_2 monitoring data during 1996-1998 are available from the two following stations in Imperial County:

- Callexico-East
- Callexico-Ethel Street

A third monitor at Niland started measuring SO_2 concentrations in mid-June 1998. Table 3.8-12 presents maximum 24-hour and annual arithmetic mean SO_2 concentrations for each station and year. The data show that the maximum 24-hour concentrations are below AAQS.

Annual average SO_2 concentrations at the two sites were always less than one-tenth of the federal annual average standard of 0.03 ppmv. Hence, the region, including the site, is classified as attainment of both CAAQS and NAAQS as shown in Table 3.8-4.

3.8.4.5 Carbon Monoxide

Carbon monoxide is a product of inefficient combustion, principally from automobiles and other mobile sources of pollution. Industrial sources typically contribute less than 10 percent of ambient CO levels. Peak CO levels usually occur during winter months, due to a combination of higher emission rates and stagnant weather conditions.

Table 3.8-13 shows the maximum 8-hour concentrations recorded at the three following monitoring stations during the period 1996-1998:

- Callexico-East
- Callexico-Ethel Street
- El Centro-9th Street

As shown, the maximum recorded concentrations are below AAQS in El Centro, but exceed them in Callexico. Callexico has substantial traffic from across the border in the nearby city of Mexicali. These cars have less emission controls than California cars. Hence, Imperial County is classified as attainment for both CAAQS and NAAQS, except for the area around Callexico.

Table 3.8-12

**Sulfur Dioxide Concentrations, Imperial County
1996 - 1998
(Parts Per Million By Volume, ppmv)**

Parameter	Location	1996	1997	1998
Maximum 24-Hour Concentration (CAAQS=0.05 ppmv)	Calexico - East	0.034	0.033	0.037
	Calexico - Ethel Street	0.034	0.033	0.037
Annual Arithmetic Mean (NAAQS = 0.03 ppmv)	Calexico - East	0.001	0.001	0.002
	Calexico - Ethel Street	0.003	0.002	0.003
Number of Days Exceeding 24-Hour (CAAQS=0.05 ppmv)	Calexico - East	0	0	0
	Calexico - Ethel Street	0	0	0
Number of Days Exceeding 24-Hour (NAAQS=0.14 ppmv)	Calexico - East	0	0	0
	Calexico - Ethel Street	0	0	0

Source: California Air Quality Data, California Air Resources Board.

Table 3.8-13

**Carbon Monoxide Concentration, Imperial County
1996 - 1998
(Parts Per Million By Volume, ppmv)**

Parameter	Location	1996	1997	1998
Maximum 8 Hour Concentration	Calexico - East	8.7	16.3	13.0
	Calexico - Ethel Street	22.1	17.8	14.4
	El Centro - 9th Street	6.8	3.7	3.5
Number of Days Exceeding 8-Hour CAAQS (9.0 ppmv) ⁽¹⁾	Calexico - East	0	4	3
	Calexico - Ethel Street	11	13	10
	El Centro - 9th Street	0	0	0
Number of Days Exceeding 8-Hour NAAQS (9 ppmv) ⁽²⁾	Calexico - East	0	2	3
	Calexico - Ethel Street	9	12	8
	El Centro - 9th Street	0	0	0

Notes:

- (1) Exceedance of the state standard is based on concentrations of 9.1 ppmv and greater.
- (2) Exceedance of the NAAQS is based on concentrations of 9.5 ppmv and greater.

Source: California Air Quality Data, California Air Resources Board.

3.8.5 Existing Emissions

The mine has been operating since 1985, and it received approval (i.e., permits) to increase production to 60 million tons per year of overburden/interburden and ore in 1996. Assumptions made to calculate the emissions associated with the currently permitted production rate are listed in Table 3.8-14. Production, and hence, emissions associated with operating equipment to achieve production, is permitted on an annual basis. Daily emissions vary because daily activity rates and production are not subject to regulatory limits.

Actual production at the mine has historically been less than permitted production. For example, total production of overburden/interburden and ore in 1998 was 24 million tons. Emissions associated with the permitted production of 60 million tons were calculated by scaling the emissions estimate for 1998 by a ratio of 2.5 (= 60 million tons divided by 24 million tons).

The assumptions in Table 3.8-14 are used to estimate the amount of equipment that would potentially be used to achieve the permitted production rate. Table 3.8-15 shows the estimated fuel consumption, hours of use, and other parameters for each equipment type that would be needed at the permitted production rate. Table 3.8-16 shows the estimated emission rates from the exhaust of the mobile equipment engines and the stationary sources, based on the parameters shown in Table 3.8-15. Noncriteria pollutant emissions that are used in the health risk assessment are discussed in Section 4.1.8.5 of this EIR/EIS.

As will be seen in the air quality impact analysis in Section 4.1.8, the daily and annual emission rates currently permitted to achieve an annual production rate of 60-million tons of overburden/interburden and ore are the same for the mine expansion. The only difference is the distribution of the emission locations over the area of the mine.

Mining activities produce fugitive dust as well as exhaust emissions. The various sources and amounts of PM₁₀ in fugitive dust are shown in Table 3.8-17. The travel of haul trucks on unpaved roads is the largest source of fugitive PM₁₀, accounting for 92 percent of total fugitive dust emissions. During the maximum scenario day, production could be 50 percent more than the average needed to achieve the permitted 60-million tons. The haul trucks could travel 6,983 miles over an unpaved road distance of approximately 1.4 miles to place overburden/interburden in a storage area and 2.8 miles to place ore on Leach Pad No. 6 Extension.

Travel of haul trucks and the onsite fleet of service/maintenance/administrative trucks on unpaved roads accounts for 98 percent of fugitive PM₁₀ emissions. The current efficiency of controlling PM₁₀ emissions from unpaved roads is estimated to be 53 percent, based on the use of the existing watering protocol (Cowherd et al., 1988). This protocol is based on watering intensity of 0.18 gallons per square yard at a frequency of every 45 minutes.

Offsite mobile source emissions are produced by the exhaust from the vehicles used by commuting employees and by delivery vehicles bringing supplies to the mine. These emissions are shown

in Table 3.8-18, amounting to only about 0.6 percent of the total emissions from the Proposed Action.

Because the mine has been operating since 1985, the impacts of existing emissions on ambient air quality have been accounted for in the monitored air quality concentrations discussed in Section 3.1.8.4.

3.8.6 Summary of Existing Air Quality Environment

The site of the Proposed Action has good air quality, both in terms of concentrations of criteria pollutants and the ability of the atmosphere to disperse local sources of air emissions. The Mesquite Mine has been operating since 1985 with an initial annual production permitted to reach 40-million tons of overburden/interburden and ore. This limit was increased to 60-million tons in 1996. Mining rates will not increase above this permitted level as a result of the Proposed Action. Hence, the emissions associated with the Proposed Action do not increase. The proposed expansion of the mine moves the location of mining activities and its emissions, but does not increase the permitted amount.

Imperial County is classified as nonattainment for ozone and PM_{10} ambient air quality standards.

The ambient concentrations of the criteria pollutants measured at the urban monitoring stations during the period 1996-1998 result in the following pollutant-specific review requirements for the Proposed Action:

- NSR of Nonattainment Pollutant Emissions:
 - NO_x (for ozone and PM_{10})
 - ROC (for ozone and PM_{10})
 - PM_{10}
 - SO_x (for PM_{10})
- PSD Review of Attainment Pollutant Emissions:
 - NO_x (for NO_2)
 - SO_x (for SO_2)
 - CO

Two criteria pollutant emissions, NO_x and SO_x , are reviewed for compliance with both NSR and PSD regulatory programs.

Table 3.8-14**Assumptions To Calculate The Permitted Emission Inventory
Mesquite Mine**

- Permitted annual production rate = 60 million total tons overburden/interburden and ore per year.
- Annual work schedule to achieve permitted annual production rate = 356 days per year (=365 minus 9 holidays per year).
- Average daily production rate to achieve permitted annual production rate = 168,539 total tons overburden/interburden and ore per day.
- Ratio of potential maximum to average daily production rates = 1.5
- Potential maximum daily production rate, consistent with permitted annual production rate = 252,809 tons overburden/interburden and ore per day.
- Onsite vehicle speed limit = 35 miles per hour.
- The boiler and carbon kiln are heated with liquid petroleum gas (LPG) having a density of 4.20 pounds per gallon.
- The PM₁₀ emission factor for the induction (electric) furnace is 0.019 pounds per hour, based on source tests on similar furnaces at the Twin Creeks Mine in Nevada.

Table 3.8-15

**Equipment Type Usage for Permitted Production Rate
Mesquite Mine**

Equipment Type	Equipment Type Monthly Fuel Consumption ⁽¹⁾ (gallons/month)	Equipment Type Monthly Usage ⁽¹⁾ (hrs/month)	Equipment Type Daily Usage ⁽²⁾ (hrs./day)	Onsite Round Trip Distance Traveled by Equipment Type		Notes
				Maximum (mi/yr.)	Maximum (mi/day) ⁽³⁾	
Loaders	16,117	740	25.0	--	--	
Haul Trucks	363,831	12,248	412.9	1,657,197	6,983	
Track Dozers	28,348	2,337	78.8	--	--	
Rubber-Tire Dozers	13,837	1,228	41.4	--	--	
Drills	29,243	903	30.4	--	--	
Cranes	--	2.5	0.084	--	--	
Motor Graders	7,789	1,123	37.8	--	--	
Shovel	109,646	1,842	62.1	--	--	
Fork Lift	--	200	6.7	--	--	
Water Truck (diesel)	18,754	1,420		198,000	834	4.7
Service Truck (diesel)	--	--	--	125,000	351	4
Light Plant	--	1,250	42.1	--	--	
Compressor	--	10	0.3	--	--	
Welder	--	13	0.4	--	--	
Pump	--	38	1.3	--	--	
Small-Med. Truck (gas)	--	--	--	485,213	1,363	4
Medium Truck (diesel)	--	--	--	125,000	351	4
Generator (diesel)	--	2,700	107	--	--	5
Generator, portable (gas)	--	50.7	2	--	--	6

-- = Not applicable

1) Average monthly usage to achieve permitted annual production rate of 60 million tons is calculated by multiplying current usage by the ratio of permitted an current production rates.

Max. mine expansion production (million tons of overburden/interburden and ore per year)= 60

Current mine production (million tons of overburden/interburden and ore per year)= 24 Ratio = 2.5

2) Total average daily usage equals average monthly usage divided by working days per month. Max. daily usage equals these values times 1.5

Average number of working days per month = 29.67

3) Working days per year to achieve permitted production rate = 356 (=365-9 Holidays)

4) Water, service, and medium diesel-fueled trucks, and small-medium gasoline-fueled trucks travel distances proportional to total production.

5) Four diesel-fueled generators pump water out of Big Chief and Vista Pits, requiring a maximum of approximately 3,500 hours per month.

Other diesel-fueled generators are only run up to 1 hour per month for testing.

6) Two portable gas-fueled generators are assumed to operate 1 hour every mining day.

7) Maximum scenario day is based on average day to achieve permitted production times the following factors: 1.5.

This page left intentionally blank

Table 3.8-16
Onsite Stationary And Mobile Source Criteria Pollutant Emissions
Mesquite Mine At Permitted Production Rate

Source	Engine HP Rating	Load Factor (1)	Daily Usage For Equipment Type (2a,2b)	Annual Usage For Equipment Type (2a)	Onsite Round-Trip Distance Traveled By Equipment Type		NOx			ROC			PM ₁₀			SOx			CO			Notes
							Emission Factor (3)	Emissions		Emission Factor (3)	Emissions		Emission Factor (3)	Emissions		Emission Factor (3)	Emissions		Emission Factor (3)	Emissions		
					(mi/ day)	(mi/ yr)		(lbs/ day)	(tons/ yr)		(lbs/ day)	(tons/ yr)		(lbs/ day)	(tons/ yr)		(lbs/ day)	(tons/ yr)		(lbs/ day)	(tons/ yr.)	
<u>Mobile Sources</u>																						
Loader	--	--	106 gal/day	25,200 gal/yr	--	--	203 g/gal	47	6	4.6 g/gal	1	0.1	0.6 g/gal	0	0.0	3.2 g/gal	1	0.1	3.1 g/gal	1	0.1	
Haul Trucks	--	--	18,396 gal/day	4,365,973 gal/yr	--	--	168 g/gal	6800	807	2.4 g/gal	96	11.4	3.1 g/gal	126	14.9	3.2 g/gal	132	15.6	33 g/gal	1350	160.2	(4)
Track Dozer	--	--	1433.3 gal/day	28,041 gal/yr	--	--	122 g/gal	386	3.8	12.1 g/gal	38	0.4	2.7 g/gal	8	0.1	3.3 g/gal	10	0.1	15 g/gal	47	0.5	(5)
Rubber-Tire Dozer	--	--	699.6 gal/day	14,734 gal/yr	--	--	112 g/gal	173	1.8	0.5 g/gal	1	0.0	2.4 g/gal	4	0.0	3.3 g/gal	5	0.1	19 g/gal	29	0.3	(6)
Drill	--	--	0.0 gal/day	10,830 gal/yr	--	--	149 g/gal	0	1.8	3 g/gal	0	0.0	7 g/gal	0	0.1	3 g/gal	0	0.0	32 g/gal	0	0.4	(7)
Crane	240	0.43	1.5 hours/day	30 hours/year	--	--	0.023 lb/hp-hr	3.6	0.04	0.003 lb/hp-hr	0.5	0.00	0.002 lb/hp-hr	0.2	0.00	0.002 lb/hp-hr	0.3	0.00	0.009 lb/hp-hr	1.4	0.01	(8)
Motor Grader	--	--	393.8 gal/day	13,474 gal/yr	--	--	133 g/gal	115	2.0	34 g/hr	30	0.5	30 g/hr	26	0.4	46 g/hr	40	0.7	94 g/hr	82	1.4	(9)
Shovel	2400	0.50	93.1 hours/day	22,101 hours/year	--	--	10.7 g/hp-hr	2654	314.9	0.12 g/hp-hr	30	3.5	0.5 g/hp-hr	124	14.7	0.14 g/hp-hr	36	4.2	0.9 g/hp-hr	223	26.5	(10)
Fork Lift	80	0.30	10.1 hours/day	2,400 hours/year	--	--	1.7 lb/hr	5.16	0.61	0.15 lb/hr	0.46	0.05	0.14 lb/hr	0.42	0.05	0.14 lb/hr	0.43	0.05	0.68 lb/hr	2.05	0.24	(11)
Water Truck (diesel)	--	--	--	--	834	198,000	19.3 g/mi	35.5	4.21	1.3 g/mi	2.4	0.29	0.75 g/mi	1.4	0.16	0.3 g/mi	0.6	0.07	7.3 g/mi	13.4	1.59	(12)
Service Truck (diesel)	--	--	--	--	351	125,000	6.8 g/mi	5.3	0.94	1.0 g/mi	0.8	0.14	0.50 g/mi	0.4	0.07	0.310 g/mi	0.2	0.04	6.0 g/mi	4.7	0.83	(13)

Source: TRC, 2000

Table 3.8-16 (continued)

Onsite Stationary And Mobile Source Criteria Pollutant Emissions
Mesquite Mine At Permitted Production Rate

Source	Engine Hp Rating	Load Factor (1)	Daily Usage For Equipment Type (2a,2b)	Annual Usage For Equipment Type (2a)	Onsite Round-Trip Distance Traveled By Equipment Type		NOx			ROC			PM ₁₀			SOx			CO			Notes
							Emission Factor (3)	Emissions		Emission Factor (3)	Emissions		Emission Factor (3)	Emissions		Emission Factor (3)	Emissions		Emission Factor (3)	Emissions		
					(mi/ day)	(mi/ yr)		(lbs/ day)	(tons/ yr)		(lbs/ day)	(tons/ yr)		(lbs/ day)	(tons/ yr)		(lbs/ day)	(tons/ yr)		(lbs/ day)	(tons/ yr.)	
Light Plant	40	0.74	42.1 hours/day	15,000 hours/year	--	--	0.018 lb/hp-hr	22.4	4.00	0.002 lb/hp-hr	2.5	0.44	0.001 lb/hp-hr	1.2	0.22	0.002 lb/hp-hr	2.5	0.44	0.011 lb/hp-hr	13.7	2.44	(14)
Compressor	90	0.48	0.5 hours/day	120 hours/year	--	--	1.7 lb/hr	0.41	0.05	0.15 lb/hr	0.04	0.004	0.14 lb/hr	0.03	0.004	0.14 lb/hr	0.03	0.004	0.68 lb/hr	0.16	0.02	(11)
Welder	90	0.45	0.6 hours/day	150 hours/year	--	--	1.7 lb/hr	0.48	0.06	0.15 lb/hr	0.04	0.01	0.14 lb/hr	0.04	0.005	0.14 lb/hr	0.04	0.005	0.68 lb/hr	0.19	0.02	(11)
Pump, Water	180	0.74	1.3 hours/day	454 hours/year	--	--	1.7 lb/hr	1.60	0.29	0.15 lb/hr	0.14	0.03	0.14 lb/hr	0.13	0.02	0.14 lb/hr	0.13	0.02	0.68 lb/hr	0.64	0.11	(11)
Small-Med. Truck (gasoline)		--	--	--	1,363	485,213	3.19 g/mi	9.6	1.71	0.30 g/mi	0.9	0.16	0.050 g/mi	0.2	0.03	0.31 g/mi	0.9	0.17	5.84 g/mi	17.5	3.12	(15)
Medium Truck (diesel)		--	--	--	351	125,000	6.82 g/mi	5.3	0.94	1.02 g/mi	0.8	0.14	0.50 g/mi	0.4	0.07	0.31 g/mi	0.2	0.04	6.0 g/mi	4.7	0.83	(13)
Generator (diesel)	60	0.74	106.6 hours/day	32,400 hours/year	--		1.7 lb/hr	181	9.7	0.15 lb/hr	16	0.9	0.14 lb/hr	15	0.8	0.14 lb/hr	15	0.8	0.68 lb/hr	72	3.8	(11)
Generator (gasoline)	10	0.74	2.0 hours/day	608 hours/year	--		0.41 lb/hr	0.6	0.00	0.54 lb/hr	0.8	0.00	0.026 lb/hr	0.04	0.80	0.02 lb/hr	0.03	0.00	17.0 lb/hr	25	0.02	(16)
Stationary Sources																						
Smelting Furnace (electric)	--	--	24 hours/day	8760 hours/year	--	--	--	--	--	--	--	--	0.019 lb/hr	0.5	0.08	--	--	--	--	--	--	
Carbon Kiln (LPG), Burner Section	--	--	--	1.1 kgal/year	--	--	20 lb/kgal	0.06	0.011	0.55 lb/kgal	0.0017	0.0003	0.60 lb/kgal	0.0018	0.0003	0.017 lb/kgal	0.0001	0.00001	3.40 lb/kgal	0.01	0.002	(17,18)

Source: TRC, 2000

Table 3.8-16 (continued)

Onsite Stationary And Mobile Source Criteria Pollutant Emissions
Mesquite Mine At Permitted Production Rate

Source	Engine Hp Rating	Load Factor (1)	Daily Usage For Equipment Type (2a,2b)	Annual Usage For Equipment Type (2a)	Onsite Round- Trip Distance Traveled By Equipment Type		NOx			ROC			PM ₁₀			SOx			CO			Notes
							Emission Factor (3)	Emissions		Emission Factor (3)	Emissions		Emission Factor (3)	Emissions		Emission Factor (3)	Emissions		Emission Factor (3)	Emissions		
					(mi/ day)	(mi/ yr)		(lbs/ day)	(tons/ yr)		(lbs/ day)	(tons/ yr)		(lbs/ day)	(tons/ yr)		(lbs/ day)	(tons/ yr)		(lbs/ day)	(tons/ yr.)	
Carbon Kiln / Drum Section	--	--	--		--	--	--	--	--	--	--	--	--	25.3	4.62	--	--	--	--	--	--	
Boiler (LPG)	--	--	--	45 kgal/year	--	--	20 lb/kgal	2.4	0.4	0.55 lb/kgal	0.07	0.012	0.60 lb/kgal	0.07	0.013	0.017 lb/kgal	0.0021	0.0004	3.40 lb/kgal	0.41	0.08	(17,19)
Electro- winning Cell	--	--	24 hours/day	8760 hours/year	--	--	--	--	--	--	--	--	0.17 lb/hr	4.1	0.74	--	--	--	--	--	--	
Gasoline Storage Tank	--	--	--	--	--	--	--	--	--	--	13.9	2.54	--	--	--	--	--	--	--	--	--	
Diesel Storage Tank #1	--	--	--	--	--	--	--	--	--	--	7.7E-04	1.4E-04	--	--	--	--	--	--	--	--	--	
Diesel Storage Tank #2	--	--	--	--	--	--	--	--	--	--	3.9E-03	7.2E-04	--	--	--	--	--	--	--	--	--	
Diesel Storage Tank #3	--	--	--	--	--	--	--	--	--	--	0.35	0.06	--	--	--	--	--	--	--	--	--	
Diesel Storage Tank #4	--	--	--	--	--	--	--	--	--	--	5.2E-04	9.5E-05	--	--	--	--	--	--	--	--	--	
Diesel Storage Tank #5	--	--	--	--	--	--	--	--	--	--	1.1E-03	2.0E-04	--	--	--	--	--	--	--	--	--	
Diesel Storage Tank #6	--	--	--	--	--	--	--	--	--	--	1.1E-03	2.0E-04	--	--	--	--	--	--	--	--	--	

Source: TRC, 2000

Table 3.8-16 (continued)

Onsite Stationary And Mobile Source Criteria Pollutant Emissions
Mesquite Mine At Permitted Production Rate

Notes:

-- = Not applicable.

1) For equipment without emission factors based on fuel (e.g., grams of NOx emitted per gallon of diesel fuel), a load factor is taken from the literature to give the average power at which the equipment type is operated.

2A) Calculated from mean monthly fuel usage for all units of one equipment type.

2B) Maximum scenario day is based on average day to achieve permitted production times the following factor:

1.5

3) Emission factors are from Caterpillar Corporation, USEPA, California Air Resources Board, and South Coast Air Quality Management District, as shown in Appendix A.

4) Haul truck emission factors are for Caterpillar 793C (see Appendix A).

5) Emission factors are for D9N (see Appendix A).

6) Same engine as 988F wheeled loader with about the same work cycle.

7) Used Caterpillar Corporation emission data for 3412 engine

8) Emission factors from SCAQMD CEQA Handbook Table A9--8-B, November 1993 (see Appendix A).

9) Emission factors for 16G or H motorgrader from Caterpillar Corp. as shown in Appendix A.

10) Assumes two 1200hp Cummins KTA38C engines. Emission factors are in Appendix A.

11) Used miscellaneous diesel equipment from SCAQMD CEQA Handbook Table A9--8-A (see Appendix A).

12) Used emission factors for heavy-heavy diesel trucks from MVEI7G Emission Factors (1999, 35mph, 75F)

13) Used emission factors for medium-heavy diesel trucks from MVEI7G Emission Factors (1999, 35mph, 75F)

14) Used emission factors for generator sets less than 50 hp from SCAQMD CEQA Handbook TableA9--8-B (see Appendix A).

15) Used gasoline-fueled vehicle emission factors from MVEI7G (1999, 35 mph, 75F).

16) Used miscellaneous gasoline-fueled equipment from SCAQMD CEQA Handbook Table A9-8-A (see Appendix A).

17) Emission factors, in pounds per 1000 gallons LPG, for gasoline-fueled generators are taken from U.S. EPA, Compilation of Air Pollutant Emission Factors, Volume 1: Stationary Point and Area Sources, Chapter 1.5: Liquefied Petroleum Gas Combustion, Tab

18) Carbon kiln proportion of LPG use is calculated from early (Count of Imperial and Bureau of Land Management, 1984) estimate of 34,640 gallons for kiln burner and 1,405,500 gallons for boiler.

19) LPG use in 1998 was 187,000 pounds (Newmont, 1999). LPG density = 4.20 lbs/gal according to Petrolane (1991).

Table 3.8-17
Onsite Fugitive PM 10 Emissions (1)
Mesquite Mine at Permitted Production Rate

Source Category	Source Description	Amount	Utilization Factor	No. units	Round-Trip Distance per Unit (miles)	Parameter 1	Hours Per Day	Uncontrolled		Control		Controlled Emission Rate		Notes	
								Emission Factor	Emission Rate (lb/day)						
										Technique	Efficiency(%)	(lb/day)	(g/sec)		
Paved Road: Property line to administration area (Distance = 200 yards).															
Employee Vehicles		--	--	82	0.23	19 vmt/day	24	0.330 lb/vmt	6	None	0%	6.15	0.0323	2	
Delivery Vehicles		--	--	10	0.23	2 vmt/day	24	0.368 lb/vmt	1	None	0%	0.84	0.0044	2	
SUBTOTAL - PAVED ROAD EMISSIONS									7			7.0	0.037		
Unpaved Road: Mine Pit to Over burden to Leach Pad Connector Roads.															
Haul Truck		--	--	--	--	6983 vmt/day	24	2.12 lb/vmt	14,786	Existing Watering	53%	6,949	36.5	3,4	
Motor Grader		--	--	2	4.3	13 vmt/day	24	0.05 lb/vmt	0.67	Existing Watering	53%	0.3	0.002	3,5	
Service Truck (diesel)		--	--	11	6.1	100 vmt/day	24	2.12 lb/vmt	212	Existing Watering	53%	99.5	0.523	3,6	
Small-Med. Truck (gasoline)		--	--	43	6.1	391 vmt/day	24	1.41 lb/vmt	552	Existing Watering	53%	259.4	1.363	3,6	
Medium Truck (diesel)		--	--	9	6.1	82 vmt/day	24	2.12 lb/vmt	173	Existing Watering	53%	81.4	0.428	3,6	
SUBTOTAL - UNPAVED ROAD EMISSIONS									15,723			7,390	39		
Miscellaneous															
Lime loading/unloading		114 tons per day	--	1	--	--	24	0.05 lb/ton	5.7	Baghouse and enclosure	90%	0.57	9.9	1.29E-05	7
ANFO loading/unloading		28 tons per day	--	1	--	--	24	0.02 lb/ton	0.6	Enclosure	99%	0.006	0.098	1.28E-07	8
Drilling		50 holes/pit/day	--	2 pits	--	25,000 holes/pit/yr	24	0.07 lb/hole	7	Wet drilling	0%	7	0.6	8.04E-07	9,14
Blasting		1 blasts/pit/day	--	2 pits	--	150 blasts/pit/yr	24	10.95 lb/blast	22	--	0%	22	1.9	2.48E-06	10
SUBTOTAL - MISCELLANEOUS EMISSIONS									35			29.6	12.5	1.63E-05	

Source: TRC, 2000

Table 3.8-17 (continued)

Onsite Fugitive PM 10 Emissions (1)
Mesquite Mine at Permitted Production Rate

Source Category	Source Description	Amount	Utilization Factor	No. units	Round-Trip Distance per Unit	Parameter 1	Hours Per Day	Uncontrolled		Control		Controlled Emission Rate (lb/day)	Controlled Emission Rate		Notes
								Emission Factor	Emission Rate (lb/day)				(lb/day-y-	(g/sec-m^2)	
										Technique	Efficiency(%)				
Disturbed Areas: Drilling, Overburden Loading and Placement, Ore Loading and Placement, and Drainage Construction															
	Shoveling overburden and loading ore	252,809 tons/day	--	2	--	--	24	1.89E-04 lb/ton	48	Existing Watering	53%	22.4	0.4	5.49E-07	3
	Track Dozing	19.44 hours/day	--	5	--	97.2 device-hrs		0.87 lb/device-hour	85	Existing Watering	53%	39.7	2.15	3.44E-06	3,11,12
	Rubber-Tire Dozing	19.44 hours/day	--	2	--	38.9 device-hrs		0.87 lb/device-hour	34	Existing Watering	53%	15.9	0.6	9.6E-07	3,11,13
SUBTOTAL - DISTURBED AREA EMISSIONS									166			78	3	0	
Wind Erosion: Drilling, Overburden Loading and Placement, Ore Loading and Placement, and Drainage Construction Areas															
	Wind Erosion	24 hours/day	--	52.9 acres	--	--	24	3.2 lb/acre-day	167	Existing Watering	53%	79	1.5	1.93E-06	3
SUBTOTAL - WIND EROSION EMISSIONS									167			79	1.5	1.93E-06	
TOTAL FUGITIVE PM10 EMISSIONS									16,064			7,554	44	6.88E-06	

Source: TRC, 2000

- = Not applicable.
- 1) Road fugitive dust is simulated in the ISC3 model as a series of volume sources with emission rates in grams per second (g/sec), while construction disturbance and wind erosion fugitive dust is simulated as area sources with emission rates in g/sec per square meter.
- 2) Emission factor taken from SCAQMD, CEQA Air Quality Handbook, November 1993.
- 3) Watering control efficiency of 53% based on Cowherd et al (1988), and a watering intensity of 0.804 liter water per square meter (=0.18 ga/sq. yd) every 45 minutes.
- 4) Maximum scenario day is based on average day to achieve permitted production times the following factor: 1.5
- 5) Motor grader is conservatively assumed to make a daily pass over the roads between the mining area and the placement areas for overburden/interburden and ore. Speed assumed to be 6 mph.
- 6) Each service, small-medium, and medium truck is conservatively assumed to make one daily 16,000-foot (one-way) trip between the maintenance area and the East Rainbow North Overburden/Interburden Storage Area.
- 7) Emission factor is for controlled emissions (USEPA, Compilation of Air Pollutant Emission Factors, Volume 1: Stationary Point and Area Sources, PB86-124906 Part 2 of 2, Chapter 8.10: Concrete Batching, Table 8.10-1, February 1972). Activity area assumed to be 50-foot square.
- 8) Emission factor is for uncontrolled emissions (USEPA, Compilation of Air Pollutant Emission Factors, Volume 1: Stationary Point and Area Sources, Chapter 8.3: Ammonium Nitrate, Table 8.3-2, July 1993). Activity area assumed to be 50-foot square.
- 9) Emission factor is for controlled wet drilling (see Table A.1-10). Activity area assumed to be 500-foot square in each of Rainbow and Big Chief Pits.
- 10) Emission factor is for uncontrolled blasting (see Table A.1-10). Activity area assumed to be 500-foot square in each of Rainbow and Big Chief Pits.
- 11) Availability of 90% and utilization of 90% result in 19.44 hours of usable time. Area= 500-foot square.
- 12) Track dozers used at three 500-foot square areas (two overburden storage areas and one leach pad) and 80 ft. by 700 ft. drainage construction area.
- 13) Two 834B rubber-tired dozers used predominantly. Two 824C rubber-tired dozers hardly used at all.
- 14) Fugitive dust created by drilling assumed similar to that from fillin ga storage pile or dumping from a truck. See Attachment 1 and SCAQMD, CEQA Air Quality Handbook, Table A9-9-G, November 1993.

Table 3.8-18

Offsite Criteria Pollutant Emission Inventory Current Mesquite Mine

Source	Total Daily Usage (1)	Total Annual Usage (2)	Maximum Number of Units (3)	Off-site Round Trip Distance		NOx		ROC			PM ₁₀		SOx			CO			Notes		
						Emission Factor	Emissions		Emission Factor	Emissions		Emission Factor	Emissions		Emission Factor	Emissions		Emission Factor		Emissions	
				(mi/day-unit)	(mi/yr-unit)		(lbs/day)	(tons/yr)		(lbs/day)	(tons/yr)		(lbs/day)	(tons/yr)		(lbs/day)	(tons/yr)			(lbs/day)	(tons/yr)
Activity																					
Communting																					
Light-heavy duty Trucks (gasoline)	1	304	82	90	27,360	2.86 g/mi.	47	7.1	0.16 g/mi.	2.6	0.40	0.050 g/mi.	0.8	0.12	0.31 g/mi.	5.0	0.77	3.67 g/mi.	59.7	9.1	4
Delivery																					
Medium Truck (diesel)	1	304	10	90	27,360	19.31 g/mi.	38	5.8	0.94 g/mi.	1.9	0.28	0.75 g/mi.	1.5	0.23	0.31 g/mi.	0.6	0.09	8.0 g/mi.	15.8	2.4	5
TOTAL							85	12.9		4.5	0.68		2.3	0.35		5.7	0.86		75.5	11.5	
1) Assumes each vehicle makes one daily round trip to the mine from surrounding communities. 2) 304 working days per year is based on 6 days per week for 52 weeks per year minus 8 holidays. 3) Conservatively assumes 164 workers carpooling at 2 persons per vehicle. 4) Emission factors for gasoline-powered light-heavy duty trucks with catalytic converters (MVEI7G for 1999, 65mph, 75°F. Distance based on average of 45 miles one-way to surrounding communities.																					

3.9 LAND USE

3.9.1 Scope and Regulatory Status

Impacts to land uses are determined by reviewing the land use plans and policies pertaining to the proposed site. The applicable plans and policies are:

1. The Imperial County General Plan;
2. Imperial County Zoning Ordinance;
3. Title 9 Imperial County Land Use Ordinance;
4. BLM California Desert Conservation Area (CDCA) Plan;
5. California Desert Protection Act (PL 103-433) October 31, 1994;
6. Northern and Eastern Colorado Desert Coordinated Management Plan (NECDMP); and,
7. Division 6 of the California Public Resources Code.

The Imperial County General Plan provides land use designations and policy guidelines for development in the unincorporated areas within Imperial County. The Proposed Action is located within the unincorporated area of Imperial County on Federal, State, and privately-owned land. Privately-owned land falls under the jurisdiction of the Imperial County General Plan and Zoning Ordinance.

Zoning and other land use regulations in Imperial County are designed to ensure land use compatibility through a hierarchical system of zoning. These regulations allow the prohibition within a designated zone of a particular class of building, structure, premise, or use (Title 9 Imperial County Land Use Ordinance, 1998).

As directed by the Federal Land Policy and Management Act of 1976 (FLPMA), the CDCA Plan was set up to manage a 25-million-acre area located in the deserts of southwestern California, including 12 million acres of public lands, which are administered by the BLM. The project area is located within the CDCA; therefore, BLM-managed land within the project area falls under the jurisdiction of this plan. The existing mine has BLM/County approvals, and the proposed expansion is within previously approved mining areas, except for two half sections of State lands to the north of Big Chief Pit. These lands were deleted from the Chocolate Mountain Gunnery Range Chocolate Mountain Parcels by the California Desert Protection Act (CDPA) of 1994. A land exchange involved a transfer of the two half sections to the California State Lands Commission (SLC) in exchange for equal value SLC inholdings (SLC lands that are situated within areas designated by the CDPA as wilderness and units of the National Park Service) within the confines of the CDPA Boundaries. The land exchange was approved in part to satisfy the 1994 CDPA provision that permits the SLC to exchange lands with the BLM for loss of the SLC inholdings. The SLC was interested in receiving the two half sections as partial compensation because of the potential value of

future mineral revenues to the State Teachers Retirement System. If the lands contain valuable minerals, the SLC would receive royalties under a mineral extraction lease, and the United States would receive title to SLC inholdings of comparable value. Under Division 6 of the California Public Resources Code, the SLC is directed to manage school lands incorporating a multiple use concept for land use planning. These uses have included recreation; research; farming; grazing; timber harvesting; oil, gas and geothermal development; mineral exploration; and mining while protecting the associated environmental resources. The SLC is currently processing a mineral extraction lease application involving approximately 658 acres of land, of which 97 acres would be disturbed by the proposed Mesquite Mine expansion. Anticipated impacts to the environmental resources located on or adjacent to the 97 acres are addressed in this EIR/EIS. Environmental issues associated with any subsequent mining development on the balance of those lands is addressed in Section 4.4.4 of this EIR, to the extent possible. No intent or plan for such development is known at this time.

The BLM is currently drafting a long-term regional management plan, which is outside the scope of this mine expansion project. The plan, entitled "Northern and Eastern Colorado Desert Coordinated Management Plan" (NECDMP), would address a broad spectrum of land uses which include mineral exploration and development as well as protection of biological resources. Plan decisions would involve only state and federal lands, and would provide the basis for the BLM to amend its 1980 California Desert Conservation Area Plan (CDCA) and for the cooperating agencies to update their land and resource management plans. An overview and progress report on the plan was published in July 1995 and addresses those comments received during the public scoping period. The scoping process has been completed and a draft plan is anticipated for release in the fall of 2000.

The mining operation was previously evaluated for potential land use impacts, and has operated under an approved Plan of Operations (POO) since 1985. The existing mining operation is consistent with the CDCA Plan and the Imperial County General Plan, and operates under permits in compliance with the Surface Mining and Reclamation Act (SMARA) and other applicable regulations.

3.9.2 Existing and Surrounding Land Uses

3.9.2.1 Existing Land Use and Ownership (Site)

The Mesquite Mine and associated processing facilities are located on public lands administered by the U.S. Bureau of Land Management (BLM), El Centro Resource Area Office of the California Desert District, and on private land owned by Hospah Coal Company and leased to Santa Fe Pacific Gold Corporation (SFPGC), and operated by Newmont Gold Company. Land ownership status within the proposed POO boundary is shown in Figure 1.3-4. The Mesquite Mine is located within portions of Sections 31, 32 and 33, Township 13 South, Range 21 East, and Sections 4,5,6,7, and 8, Township 14 South, Range 21 East, San Bernardino Baseline & Meridian (SBB&M). The facility currently encompasses approximately 5,200 acres, of which approximately 3,800 acres have been disturbed under existing permits and approvals. Existing and permitted facilities are described in Chapter 1 section 1.3.2.2 of this EIR, which includes existing and allowable disturbance acreage (Table 1.3-1).

3.9.2.2 Surrounding Land Uses

Current land uses in the area consist of mineral exploration and development, aerial military training overflights, utility corridors, and dispersed recreational activities by the general public. Similar public lands with similar uses generally surround the project area. A self-guided overlook trail, approximately 0.8 miles in length, is located along the mine access road. This trail provides a view of the mine's operations as well as other information about the desert. This trail, designed to educate visitors, was built voluntarily as a joint effort by Gold Fields, the former owner of the Mine, and the BLM. The nearest permanent residences to the Mesquite Mine are located at the Boardman and Glamis Beach Store areas, located three to 3.5 miles, respectively, southwest of the Mine.

Several operating mines are located or proposed in the vicinity of the Mesquite Mine. The American Girl/Oro Cruz Mine is located about 15 miles south of the site, while the Picacho Mine is located about 16 miles east of the site. The Imperial Project Mine is proposed about 10 miles southeast of the Mesquite Mine.

The U.S. Marine Corps (USMC) maintains the Chocolate Mountain Aerial Gunnery Range (CMAGR), which is located immediately north of the Mesquite Mine. The USMC uses CMAGR for military aircraft training and live ordinance delivery. The USMC conducts both daytime and nighttime helicopter flight training in and around the Project area, and two military visual flight rule (VFR), low-level flying routes for fixed wing aircraft are located in the vicinity of the Project area (Personal Communication, T.A. Manfredi, USMC, June 2, 1995). Mine operations are currently compatible with the CMAGR.

3.9.3 Adopted Land Use Plans and Policies

The use of land on the project area is controlled by a number of adopted plans and policies, which are discussed below in greater detail.

3.9.3.1 Imperial County General Plan

The Imperial County General Plan was developed to create a balanced, comprehensive guide for future physical development of lands within the County, and provides mechanisms to achieve the County's desired goals and objectives. The General Plan strives towards achieving a balance between development and economic, social, and environmental resources. The General Plan includes the following mandatory Elements: Land Use, Circulation/Scenic Highways, Housing, Conservation/Open Space, Seismic and Public Safety, and Noise. In addition, the County has included three additional Elements: Agriculture, Water, and Geothermal.

The Land Use Element of the Imperial County General Plan indicates that the mine is located within a large expanse of land currently dedicated to Special Purpose Facility, Recreation/Open Space, and Government/Special Public uses. The Special Purpose Facility designation allows mining and processing of mineral, aggregate, or other natural resources following approval of a conditional use permit.

Five elements in the General Plan are relevant to the Proposed Action: Land Use Element, Seismic and Public Safety Element, Conservation and Open Space Element, Water Element, and Noise Element. These elements include specific goals and objectives that must be considered for the Proposed Action. The purpose and specific objectives of each element of the County of Imperial Draft General Plan along with an analysis of the consistency/inconsistency with each relevant General Plan Objective is provided in Section 4.1.9 of this EIR/EIS.

Land Use Element

The Land Use Element guides the decision makers, staff, and the public in the distribution, general location, and extent of uses of land for housing, business, industry, open space, agriculture, and public facilities. The Land Use Element of the General Plan serves as the primary policy statement by the Board of Supervisors for implementing development policies and land uses in Imperial County, and presents Imperial County's goals, policies, principles, and implementation measures relative to all land use within the unincorporated areas of the County.

A key component of the Land Use Element is to delineate the boundaries and establish development standards for land use categories in order to maintain consistency and compatibility between uses and to classify the various land uses recognized by the General Plan. The Land Use Element contains nine land use designations and identifies allowable uses and provides development standards for each land use designation. Goals and objectives are included in the Land Use Element and the other General Plan elements. These goals are included as guidelines for land use decision-making. However, it should be noted that the General Plan also provides that "other social, economic, environmental, and legal considerations are involved in land use decisions and that these goals and objectives should be used as guidelines, but not doctrines."

Seismic and Public Safety Element

The Seismic and Public Safety Element identifies potential natural and human-induced hazards and provides policy to avoid or minimize the risk associated with hazards. Potential hazards must be addressed in the land use planning process to avoid the unfolding of dangerous situations. For example, the risk associated with dangerous flooding can be avoided by not allowing development in floodplains and imposing strict safety standards on water transmission facilities.

The purpose of the Seismic and Public Safety Element contained within the General Plan is directly concerned with reducing the loss of life, injury, and property damage that might result from a disaster or accident. This Element identifies goals and policies that would minimize the risks associated with natural and human-made hazards. In addition, the Element specifies land use planning procedures that should be implemented to avoid hazardous situations.

Conservation and Open Space Element

The County is charged with the responsibility of conserving environmental resources while encouraging economic development and growth. The Conservation and Open Space Element

identifies goals and policies to insure the managed use of environmental resources. The goals and policies are also designed to prevent limiting the range of resources available to future generations.

Water Element

The purpose of this element is to identify and analyze the types of water resources within Imperial County and to assure that goals and policies are adopted that preserve and enhance resource availability and quality. It has been prepared to assure that water resources are conserved and utilized to enhance long-term availability, while providing for current supplies and demands. In addition, this element has been prepared to improve the use and distribution of water in Imperial County, including the extension of current water conservation programs. Through this element, the County provides leadership, information and advisor services to help users increase efficiencies in their water consumption within the County.

Noise Element

The Noise Element contained within the General Plan provides a program for incorporating noise issues into the land use planning process with a goal of minimizing adverse noise impacts to receptors that are sensitive to noise. The Noise Element identifies existing and future noise sources, and defines noise-sensitive land uses. The element establishes goals, objectives, and procedures to protect the public from noise intrusion. The Noise Element also provides noise level criteria to be used to determine compatibility with all land use categories.

3.9.3.2 Imperial County Zoning and Land Use Regulations

Imperial County zoning and other land use regulations are designed to promote land use compatibility by designating acceptable uses and activities within identified areas or zones. Zoning regulations promote or prohibit uses, and designate appropriate building classes or structures within the various zones which are, in part, intended to prevent or inhibit conflicting or incompatible growth or uses within the respective zones (Imperial County, 1998).

The County has zoned the project site and surrounding area as S-2 (Open Space/Preservation), and G/S (Government/Special) with the exception of the area containing the approved but unbuilt 2,290-acre Mesquite Regional Landfill, which received an approved zone change in March 1997 from the S-2 (Open Space) to the “M-3” (Heavy Industrial) Zone. The S-2 Zone classification permits multiple use of the area, consistent with the objectives of the Open Space Element of the Imperial County General Plan (Imperial County, 1993). In the event that a parcel zoned G/S by virtue of the fact that it is under public ownership is sold or otherwise privatized, the zone of the parcel shall be automatically changed to that of S-2 (Title 9 Imperial County Land Use Ordinance, § 90520.12). Surface mining operations may be permitted in any zone upon the granting of a conditional use permit (ICZO § 83422). Subsequent approvals relevant to the Proposed Action are listed in Table 1.7-1.

3.9.3.3 BLM California Desert Conservation Area (CDCA) Plan

The Proposed Action site is located within the BLM CDCA, and is subject to the CDCA Plan. The CDCA encompasses 25 million acres of desert lands in eastern California, including 12 million acres of public lands. The CDCA was established by FLPMA. This law was passed by Congress in 1976 to direct the management of the public lands of the United States. The BLM was directed to inventory the CDCA resources and prepare a comprehensive land-use management plan. As the 12 million acres of public lands made up only half of the CDCA, this plan had to consider the effect that BLM-managed public lands would have on the other private lands included in the CDCA. Section 601 of FLPMA requires the BLM to develop a plan to ". . . provide for the immediate and future protection and administration of public lands in the California Desert within the framework of a program of multiple use and sustained yield, and the maintenance of environmental quality." Section 103 of FLPMA defines the terms "multiple use" and "sustained yield" as follows:

- The term "multiple use" means the management of public lands and their various resource values so that they are used in a combination that would best meet the present and future needs of the American people; making the most judicious use of the land for some or all of these resources or related services over areas large enough to provide sufficient latitude for periodic adjustments in the use to conform to changing needs and conditions; the use of some land for less than all of the resources; a combination of balanced and diverse resource values that takes into account the long-term needs of future generations for the renewable and non-renewable resources including but not limited to recreation, range, timber, minerals, watershed, wildlife and fish, and natural scenic, scientific, and historic values (BLM, 1980).
- The term "sustained yield" means the achievement and maintenance in perpetuity of a high-level annual or regular periodic output of the various renewable resources of the public lands consistent with multiple use (BLM, 1980).

The goal of the CDCA Plan is to provide and enhance uses for the public lands in the CDCA area including economic, educational, scientific and recreational uses, without diminishing the environmental, cultural and aesthetic values of these lands.

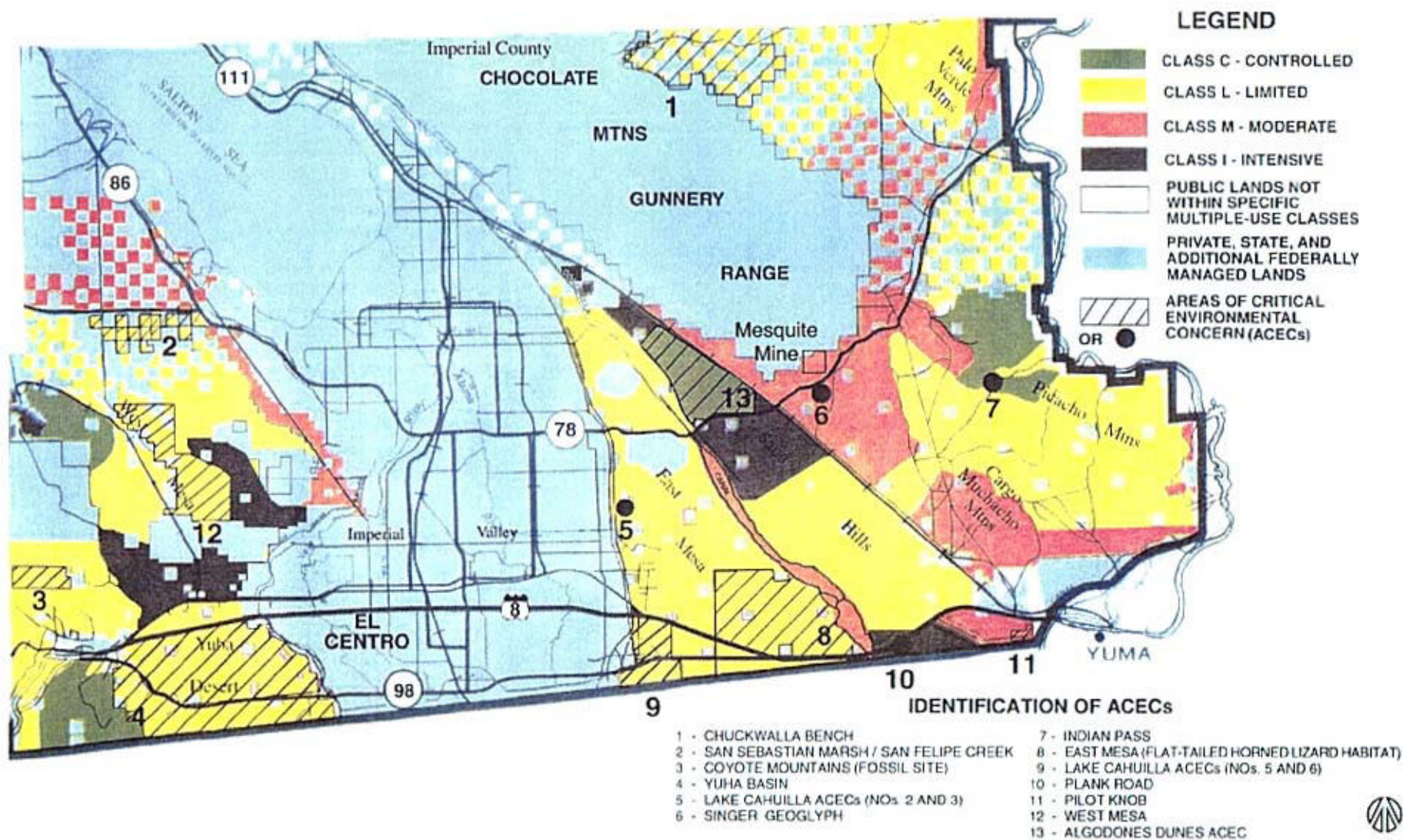
To aid in achieving this goal, all public lands in the CDCA under BLM management, except for a few small and scattered parcels, have been designated geographically into four multiple-use classes. Each class describes a different type, or degree of use permitted within that geographical area. The multiple-use classes include Class C (Controlled Use), Class L (Limited Use), Class M (Moderate Use), and Class I (Intensive Use). The CDCA Plan was adopted in 1980 and has been amended on an annual basis since. Figure 3.9-1 presents the CDCA Plan Map, including Plan amendments through the year 1990.

CDCA has designated the Mesquite Mine area as Multiple-Use Class M. This designation provides for balanced use between higher-intensity uses and protection of public lands. This designation allows mining, livestock grazing, energy and utility development, and recreational uses. Management of Class M lands is also designed to conserve desert resources and to mitigate damage to those resources that permitted uses may cause (BLM, 1980). Its purpose is to provide for concentrated use of lands and resources to meet human needs.

California Desert Protection Act

Applicable provisions of this Act have been described in Section 3.1.1 of this EIR.

This page left intentionally blank.



SOURCE: U.S. Dept. of the Interior, Bureau of Land Management, 1992

8/3/00

Mesquite Mine Expansion EIR/EIS

BLM CDCA Plan Land Use Designations**FIGURE
3.9-1**